

# FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO  
Colorado Bend II Power, LLC

AUTHORIZING THE OPERATION OF  
Colorado Bend II Power Plant  
Electric Services

LOCATED AT  
Wharton County, Texas  
Latitude 29° 17' 13" Longitude 96° 3' 57"  
Regulated Entity Number: RN104772538

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site, emission units and affected source listed in this permit. Operations of the site, emission units and affected source listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site, emission units and affected source authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site, emission units and affected source.

Permit No: 03849 Issuance Date: \_\_\_\_\_

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For the Commission

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## **General Terms and Conditions**

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

## **Special Terms and Conditions:**

### **Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting**

1. Permit holder shall comply with the following requirements:
  - A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.
  - B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.
  - C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.

- D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.
  - E. Emission units subject to 40 CFR Part 63, Subpart ZZZZ as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113, Subchapter C, § 113.1090 which incorporates the 40 CFR Part 63 Subpart by reference.
2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):
- A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements
  - B. Title 30 TAC § 101.3 (relating to Circumvention)
  - C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ
  - D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ
  - E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)
  - F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)
  - G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)
  - H. Title 30 TAC § 101.221 (relating to Operational Requirements)
  - I. Title 30 TAC § 101.222 (relating to Demonstrations)
  - J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)
3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:
- A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute and constructed after January 31, 1972 that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1, shall not exceed 20% opacity averaged over a six-minute period. The permit holder shall comply with the following requirements for stationary vents at the site subject to this standard:
    - (i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)
    - (ii) Title 30 TAC § 111.111(a)(1)(E)
    - (iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)

- (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO<sub>x</sub>, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive ventilation, such as plumbing vents; or vent emissions from any other source that does not obstruct the transmission of light. Vents, as specified in the “Applicable Requirements Summary” attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:
- (1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
  - (2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
  - (3) Records of all observations shall be maintained.
  - (4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer’s eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

- (5) Compliance Certification:
  - (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).
  - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.
  - (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.
- B. Certification of opacity readers determining opacities under Method 9 (as outlined in 40 CFR Part 60, Appendix A) to comply with opacity monitoring requirements shall be accomplished by completing the Visible Emissions Evaluators Course, or approved agency equivalent, no more than 180 days before the opacity reading.
- C. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:
  - (i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)
  - (ii) Sources with an effective stack height ( $h_e$ ) less than the standard effective stack height ( $H_e$ ), must reduce the allowable emission level by multiplying it by  $[h_e/H_e]^2$  as required in 30 TAC § 111.151(b)
  - (iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)
- D. Outdoor burning, as stated in 30 TAC § 111.201, shall not be authorized unless the following requirements are satisfied:

- (i) Title 30 TAC § 111.205 (relating to Exception for Fire Training)
  - (ii) Title 30 TAC § 111.207 (relating to Exception for Recreation, Ceremony, Cooking, and Warmth)
  - (iii) Title 30 TAC § 111.209 (relating to Exception for Disposal Fires)
  - (iv) Title 30 TAC § 111.219 (relating to General Requirements for Allowable Outdoor Burning)
  - (v) Title 30 TAC § 111.221 (relating to Responsibility for Consequences of Outdoor Burning)
4. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 60, unless otherwise stated in the applicable subpart:
- A. Title 40 CFR § 60.7 (relating to Notification and Recordkeeping)
  - B. Title 40 CFR § 60.8 (relating to Performance Tests)
  - C. Title 40 CFR § 60.11 (relating to Compliance with Standards and Maintenance Requirements)
  - D. Title 40 CFR § 60.12 (relating to Circumvention)
  - E. Title 40 CFR § 60.13 (relating to Monitoring Requirements)
  - F. Title 40 CFR § 60.14 (relating to Modification)
  - G. Title 40 CFR § 60.15 (relating to Reconstruction)
  - H. Title 40 CFR § 60.19 (relating to General Notification and Reporting Requirements)
5. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.

#### **Additional Monitoring Requirements**

6. The permit holder shall comply with the periodic monitoring requirements as specified in the attached “Periodic Monitoring Summary” upon issuance of the permit. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permit holder shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time specified in the “Periodic Monitoring Summary,” for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances to avoid reporting deviations. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).

## **New Source Review Authorization Requirements**

7. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:
  - A. Are incorporated by reference into this permit as applicable requirements
  - B. Shall be located with this operating permit
  - C. Are not eligible for a permit shield
8. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.
9. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, safety data sheets (SDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

## **Compliance Requirements**

10. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.
11. Use of Discrete Emission Credits to comply with the applicable requirements:
  - A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:
    - (i) Title 30 TAC Chapter 115
    - (ii) Title 30 TAC Chapter 117



- (iii) If applicable, offsets for Title 30 TAC Chapter 116
  - (iv) Temporarily exceed state NSR permit allowables
- B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:
  - (i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)
  - (ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4
  - (iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)
  - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122
  - (v) Title 30 TAC § 101.375 (relating to Emission Reductions Achieved Outside the United States)

#### **Protection of Stratospheric Ozone**

- 12. Permit holders at a site subject to Title VI of the FCAA Amendments shall meet the following requirements for protection of stratospheric ozone:
  - A. Any on site servicing, maintenance, and repair on refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants or non-exempt substitutes shall be conducted in accordance with 40 CFR Part 82, Subpart F. Permit holders shall ensure that repairs on or refrigerant removal from refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart F.

#### **Permit Location**

- 13. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

#### **Permit Shield (30 TAC § 122.148)**

- 14. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit

shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

### **Acid Rain Permit Requirements**

15. For units CTDB3-A and CTDB3-B (identified in the Certificate of Representation as units CT7 and CT8), located at the affected source identified by ORIS/Facility code 56350, the designated representative and the owner or operator, as applicable, shall comply with the following Acid Rain Permit requirements.

#### **A. General Requirements**

- (i) Under 30 TAC § 122.12(1) and 40 CFR Part 72, the Acid Rain Permit requirements contained here are a separable portion of the Federal Operating Permit (FOP) and have an independent public comment process which may be separate from, or combined with the FOP.
- (ii) The owner and operator shall comply with the requirements of 40 CFR Part 72 and 40 CFR Part 76. Any noncompliance with the Acid Rain Permit will be considered noncompliance with the FOP and may be subject to enforcement action.
- (iii) The owners and operators of the affected source shall operate the source and the unit in compliance with the requirements of this Acid Rain Permit and all other applicable State and federal requirements.
- (iv) The owners and operators of the affected source shall comply with the General Terms and Conditions of the FOP that incorporates this Acid Rain Permit.
- (v) The term for the Acid Rain permit shall commence with the issuance of the FOP that incorporates the Acid Rain permit and shall be run concurrent with the remainder of the term of the FOP. Renewal of the Acid Rain permit shall coincide with the renewal of the FOP that incorporates the Acid Rain permit and subsequent terms shall be no more than five years from the date of renewal of the FOP and run concurrent with the permit term of the FOP.

#### **B. Monitoring Requirements**

- (i) The owners and operators, and the designated representative, of the affected source and each affected unit at the source shall comply with the monitoring requirements contained 40 CFR Part 75.
- (ii) The emissions measurements recorded and reported in accordance with 40 CFR Part 75 and any other credible evidence shall be used to determine compliance by the affected source with the acid rain emissions limitations and emissions reduction requirements for SO<sub>2</sub> and NO<sub>x</sub> under the ARP.
- (iii) The requirements of 40 CFR Part 75 shall not affect the responsibility of the owners and operators to monitor emission of other pollutants or other emissions characteristics at the unit under other applicable requirements of the FCAA Amendments (42 U.S.C. 7401, as amended

November 15, 1990) and other terms and conditions of the operating permit for the source.

C. SO<sub>2</sub> emissions requirements

- (i) The owners and operators of each source and each affected unit at the source shall comply with the applicable acid rain emissions limitations for SO<sub>2</sub>.
- (ii) As of the allowance transfer deadline the owners and operators of the affected source and each affected unit at the source shall hold, in the unit's compliance subaccount, allowances in an amount not less than the total annual emissions of SO<sub>2</sub> for the previous calendar year.
- (iii) Each ton of SO<sub>2</sub> emitted in excess of the acid rain emissions limitations for SO<sub>2</sub> shall constitute a separate violation of the FCAA amendments.
- (iv) An affected unit shall be subject to the requirements under (i) and (ii) of the SO<sub>2</sub> emissions requirements as follows:
  - (1) Starting January 1, 2000, an affected unit under 40 CFR § 72.6(a)(2); or
  - (2) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR Part 75, an affected unit under 40 CFR § 72.6(a)(3).
- (v) Allowances shall be held in, deducted from, or transferred into or among Allowance Tracking System accounts in accordance with the requirements of the ARP.
- (vi) An allowance shall not be deducted, for compliance with the requirements of this permit, in a calendar year before the year for which the allowance was allocated.
- (vii) An allowance allocated by the EPA Administrator or under the ARP is a limited authorization to emit SO<sub>2</sub> in accordance with the ARP. No provision of the ARP, Acid Rain permit application, this Acid Rain Permit, or an exemption under 40 CFR §§ 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (viii) An allowance allocated by the EPA Administrator under the ARP does not constitute a property right.

D. NO<sub>x</sub> Emission Requirements

- (i) The owners and operators of the source and each affected unit at the source shall comply with the applicable acid rain emissions limitations for NO<sub>x</sub> under 40 CFR Part 76.

E. Excess emissions requirements for SO<sub>2</sub> and NO<sub>x</sub>.

- (i) The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77.
- (ii) If an affected source has excess emissions in any calendar year shall, as required by 40 CFR Part 77:
  - (1) Pay, without demand, the penalty required and pay, upon demand, the interest on that penalty.
  - (2) Comply with the terms of an approved offset plan.

F. Recordkeeping and Reporting Requirements

- (i) Unless otherwise provided, the owners and operators of the affected source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the EPA Administrator.
  - (1) The certificate of representation for the designated representative for the source and each affected unit and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR § 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative.
  - (2) All emissions monitoring information, in accordance with 40 CFR Part 75, provided that to the extent that 40 CFR Part 75 provides for a 3-year period for recordkeeping (rather than a five-year period cited in 30 TAC § 122.144), the 3-year period shall apply.
  - (3) Copies of all reports, compliance certifications, and other submissions and all records made or required under the ARP or relied upon for compliance certification.
  - (4) Copies of all documents used to complete an acid rain permit application and any other submission under the ARP or to demonstrate compliance with the requirements of the ARP.
- (ii) The designated representative of an affected source and each affected unit at the source shall submit the reports required under the ARP including those under 40 CFR Part 72, Subpart I and 40 CFR Part 75.

G. Liability

- (i) Any person who knowingly violates any requirement or prohibition of the ARP, a complete acid rain permit application, an acid rain permit, or a written exemption under 40 CFR §§ 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to FCAA § 113(c).

- (ii) Any person who knowingly makes a false, material statement in any record, submission, or report under the ARP shall be subject to criminal enforcement pursuant to FCAA § 113(c) and 18 U.S.C. 1001.
  - (iii) No permit revision shall excuse any violation of the requirements of the ARP that occurs prior to the date that the revision takes effect.
  - (iv) The affected source and each affected unit shall meet the requirements of the ARP contained in 40 CFR Parts 72 through 78.
  - (v) Any provision of the ARP that applies to an affected source or the designated representative of an affected source shall also apply to the owners and operators of such source and of the affected units at the source.
  - (vi) Any provision of the ARP that applies to an affected unit (including a provision applicable to the DR of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR § 72.44 (Phase II repowering extension plans) and 40 CFR § 76.11 (NO<sub>x</sub> averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR Part 75 (including 40 CFR §§ 75.16, 75.17, and 75.18), the owners and operators and the DR of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the DR and that is located at a source of which they are not owners or operators or the DR.
  - (vii) Each violation of a provision of 40 CFR Parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or DR of such source or unit, shall be a separate violation of the FCAA Amendments.
- H. Effect on other authorities. No provision of the ARP, an acid rain permit application, an acid rain permit, or an exemption under 40 CFR §§ 72.7 or 72.8 shall be construed as:
- (i) Except as expressly provided in Title IV of the FCAA Amendments, exempting or excluding the owners and operators and, to the extent applicable, the DR of an affected source or affected unit from compliance with any other provision of the FCAA Amendments, including the provisions of Title I of the FCAA Amendments relating to applicable National Ambient Air Quality Standards or State Implementation Plans.
  - (ii) Limiting the number of allowances a unit can hold; provided, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the FCAA Amendments.
  - (iii) Requiring a change of any kind in any state law regulating electric utility rates and charges, affecting any state law regarding such state regulation, or limiting such state regulation, including any prudence review requirements under such state law.

- (iv) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
  - (v) Interfering with or impairing any program for competitive bidding for power supply in a state in which such program is established.
- I. The number of SO<sub>2</sub> allowances allocated by the EPA in 40 CFR Part 73 is enforceable only by the EPA Administrator.

### **Clean Air Interstate Rule Permit Requirements**

16. For units CTDB3-A and CTDB3-B (identified in the Certificate of Representation as units CT7 and CT8), located at the affected source identified by ORIS/Facility code 56350, the designated representative and the owner or operator, as applicable, shall comply with the following Clean Air Interstate Rule (CAIR) Permit requirements. Until approval of the Texas CAIR SIP by EPA, the permit holder shall comply with the equivalent requirements of 40 CFR Part 97 in place of the referenced 40 CFR Part 96 requirements in the Texas CAIR permit and 30 TAC Chapter 122 requirements.

#### **A. General Requirements**

- (i) Under 30 TAC § 122.420(b) and 40 CFR §§ 96.120(b) and 96.220(b) the CAIR Permit requirements contained here are a separable portion of the Federal Operating Permit (FOP).
- (ii) The owners and operators of the CAIR NO<sub>x</sub> and the CAIR SO<sub>2</sub> source shall operate the source and the unit in compliance with the requirements of this CAIR permit and all other applicable State and federal requirements.
- (iii) The owners and operators of the CAIR NO<sub>x</sub> and the CAIR SO<sub>2</sub> source shall comply with the General Terms and Conditions of the FOP that incorporates this CAIR Permit.
- (iv) The term for the initial CAIR permit shall commence with the issuance of the revision containing the CAIR permit and shall be the remaining term for the FOP that incorporates the CAIR permit. Renewal of the initial CAIR permit shall coincide with the renewal of the FOP that incorporates the CAIR permit and subsequent terms shall be no more than five years from the date of renewal of the FOP and run concurrent with the permit term of the FOP.

#### **B. Monitoring and Reporting Requirements**

- (i) The owners and operators, and the CAIR designated representative, of the CAIR NO<sub>x</sub> source and each CAIR NO<sub>x</sub> unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements contained 40 CFR Part 96, Subpart HH.
- (ii) The owners and operators, and the CAIR designated representative, of the CAIR SO<sub>2</sub> source and each CAIR SO<sub>2</sub> unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements contained 40 CFR Part 96, Subpart HHH.

- (iii) The emissions measurements recorded and reported in accordance with 40 CFR Part 96, Subpart HH and any other credible evidence shall be used to determine compliance by the CAIR NO<sub>x</sub> source with the CAIR NO<sub>x</sub> emissions limitation.
- (iv) The emissions measurements recorded and reported in accordance with 40 CFR Part 96, Subpart HHH and any other credible evidence shall be used to determine compliance by the CAIR SO<sub>2</sub> source with the CAIR SO<sub>2</sub> emissions limitation.

C. NO<sub>x</sub> emissions requirements

- (i) As of the allowance transfer deadline for a control period, the owners and operators of the CAIR NO<sub>x</sub> source and each CAIR NO<sub>x</sub> unit at the source shall hold, in the source's compliance account, CAIR NO<sub>x</sub> allowances available for compliance deductions for the control period under 40 CFR § 96.154(a) in an amount not less than the tons of total nitrogen oxides emissions for the control period from all CAIR NO<sub>x</sub> units at the source, as determined in accordance with the requirements of 40 CFR Part 96, Subpart HH.
- (ii) A CAIR NO<sub>x</sub> unit shall be subject to the requirements of paragraph C.(i) of this CAIR Permit starting on the later of January 1, 2009, or the deadline for meeting the unit's monitor certification requirements under 40 CFR § 96.170(b)(1), (2), or (5).
- (iii) A CAIR NO<sub>x</sub> allowance shall not be deducted, for compliance with the requirements of this permit, for a control period in a calendar year before the year for which the CAIR NO<sub>x</sub> allowance was allocated.
- (iv) CAIR NO<sub>x</sub> allowances shall be held in, deducted from or transferred into or among CAIR NO<sub>x</sub> Allowance Tracking System accounts in accordance with the requirements of 40 CFR Part 96, Subpart FF or Subpart GG.
- (v) A CAIR NO<sub>x</sub> allowance is a limited authorization to emit one ton of nitrogen oxides in accordance with the CAIR NO<sub>x</sub> Annual Trading Program. No provision of the CAIR NO<sub>x</sub> Annual Trading Program, the CAIR permit application, the CAIR permit, or an exemption under 40 CFR § 96.105 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.
- (vi) A CAIR NO<sub>x</sub> allowance does not constitute a property right.
- (vii) Upon recordation by the Administrator under 40 CFR Part 96, Subpart FF or Subpart GG, every allocation, transfer, or deduction of a CAIR NO<sub>x</sub> allowance to or from a CAIR NO<sub>x</sub> unit's compliance account is incorporated automatically in this CAIR permit.

D. NO<sub>x</sub> excess emissions requirement

- (i) If a CAIR NO<sub>x</sub> source emits nitrogen oxides during any control period in excess of the CAIR NO<sub>x</sub> emissions limitation, the owners and operators of the source and each CAIR NO<sub>x</sub> unit at the source shall surrender the CAIR

NO<sub>x</sub> allowances required for deduction under 40 CFR § 96.154(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law.

- (ii) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR Part 96, Subpart AA, the Clean Air Act, and applicable State law.

E. SO<sub>2</sub> emissions requirements

- (i) As of the allowance transfer deadline for a control period, the owners and operators of the CAIR SO<sub>2</sub> source and each CAIR SO<sub>2</sub> unit at the source shall hold, in the source's compliance account, CAIR SO<sub>2</sub> allowances available for compliance deductions for the control period under 40 CFR § 96.254(a) and (b) in an amount not less than the tons of total sulfur dioxides emissions for the control period from all CAIR SO<sub>2</sub> units at the source, as determined in accordance with the requirements of 40 CFR Part 96, Subpart HHH.
- (ii) A CAIR SO<sub>2</sub> unit shall be subject to the requirements of paragraph E.(i) of this CAIR Permit starting on the later of January 1, 2010, or the deadline for meeting the unit's monitor certification requirements under 40 CFR § 96.270(b)(1), (2), or (5).
- (iii) A CAIR SO<sub>2</sub> allowance shall not be deducted, for compliance with the requirements of this permit, for a control period in a calendar year before the year for which the CAIR SO<sub>2</sub> allowance was allocated.
- (iv) CAIR SO<sub>2</sub> allowances shall be held in, deducted from, or transferred into or among CAIR SO<sub>2</sub> Allowance Tracking System accounts in accordance with the requirements of 40 CFR Part 96, Subpart FFF or Subpart GGG.
- (v) A CAIR SO<sub>2</sub> allowance is a limited authorization to emit sulfur dioxide in accordance with the CAIR SO<sub>2</sub> Trading Program. No provision of the CAIR SO<sub>2</sub> Trading Program, the CAIR permit application, the CAIR permit, or an exemption under 40 CFR § 96.205 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.
- (vi) A CAIR SO<sub>2</sub> allowance does not constitute a property right.
- (vii) Upon recordation by the Administrator under 40 CFR Part 96, Subpart FFF or Subpart GGG, every allocation, transfer, or deduction of a CAIR SO<sub>2</sub> allowance to or from a CAIR SO<sub>2</sub> unit's compliance account is incorporated automatically in this CAIR permit.

F. SO<sub>2</sub> excess emissions requirements

- (i) If a CAIR SO<sub>2</sub> source emits sulfur dioxides during any control period in excess of the CAIR SO<sub>2</sub> emissions limitation, the owners and operators of the source and each CAIR SO<sub>2</sub> unit at the source shall surrender the CAIR SO<sub>2</sub> allowances required for deduction under 40 CFR § 96.254(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy



imposed, for the same violations, under the Clean Air Act or applicable State law.

- (ii) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR Part 96, Subpart AAA, the Clean Air Act, and applicable State law.

G. Recordkeeping and Reporting Requirements

- (i) Unless otherwise provided, the owners and operators of the CAIR NO<sub>x</sub> source and each CAIR NO<sub>x</sub> unit at the source and the CAIR SO<sub>2</sub> source and each CAIR SO<sub>2</sub> unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.
  - (1) The certificate of representation under 40 CFR §§ 96.113 and 96.213 for the CAIR NO<sub>x</sub> designated representative for the source and each CAIR NO<sub>x</sub> unit and the CAIR SO<sub>2</sub> designated representative for the source and each CAIR SO<sub>2</sub> unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5 year period until such documents are superseded because of the submission of a new certificate of representation under 40 CFR §§ 96.113 and 96.213 changing the CAIR designated representative.
  - (2) All emissions monitoring information, in accordance with 40 CFR Part 96, Subpart HH and Subpart HHH, provided that to the extent that these subparts provide for a 3-year period for recordkeeping, the 3-year period shall apply.
  - (3) Copies of all reports, compliance certifications, and other submissions and all records made or required under the CAIR NO<sub>x</sub> Annual Trading Program and CAIR SO<sub>2</sub> Trading Program or relied upon for compliance determinations.
  - (4) Copies of all documents used to complete a CAIR permit application and any other submission under the CAIR NO<sub>x</sub> Annual Trading Program and CAIR SO<sub>2</sub> Trading Program or to demonstrate compliance with the requirements of the CAIR NO<sub>x</sub> Annual Trading Program and CAIR SO<sub>2</sub> Trading Program.
- (ii) The CAIR designated representative of a CAIR NO<sub>x</sub> source and each CAIR NO<sub>x</sub> unit at the source and a CAIR SO<sub>2</sub> source and each CAIR SO<sub>2</sub> unit at the source shall submit the reports required under the CAIR NO<sub>x</sub> Annual Trading Program and the CAIR SO<sub>2</sub> Trading Program including those under 40 CFR Part 96, Subpart HH and Subpart HHH.

- H. The CAIR NO<sub>x</sub> source and each CAIR NO<sub>x</sub> unit shall meet the requirements of the CAIR NO<sub>x</sub> Annual Trading Program contained in 40 CFR Part 96, Subparts AA through II.

- I. The CAIR SO<sub>2</sub> source and each CAIR SO<sub>2</sub> unit shall meet the requirements of the CAIR SO<sub>2</sub> Trading Program contained in 40 CFR Part 96, Subparts AAA through III.
- J. Any provision of the CAIR NO<sub>x</sub> Annual Trading Program and the CAIR SO<sub>2</sub> Trading Program that applies to a CAIR NO<sub>x</sub> source or CAIR SO<sub>2</sub> source or the CAIR designated representative of a CAIR NO<sub>x</sub> source or CAIR SO<sub>2</sub> source shall also apply to the owners and operators of such source and the units at the source.
- K. Any provision of the CAIR NO<sub>x</sub> Annual Trading Program and the CAIR SO<sub>2</sub> Trading Program that applies to a CAIR NO<sub>x</sub> unit or CAIR SO<sub>2</sub> unit or the CAIR designated representative of a CAIR NO<sub>x</sub> unit or CAIR SO<sub>2</sub> unit shall also apply to the owners and operators of such unit.
- L. No provision of the CAIR NO<sub>x</sub> Annual Trading Program, CAIR SO<sub>2</sub> Trading Program, a CAIR permit application, a CAIR permit, or an exemption under 40 CFR §§ 96.105 or 96.205 shall be construed as exempting or excluding the owners and operators, and the CAIR designated representative, of a CAIR NO<sub>x</sub> source or CAIR NO<sub>x</sub> unit or a CAIR SO<sub>2</sub> source or CAIR SO<sub>2</sub> unit from compliance with any other provision of the applicable, approved State implementation plan, a federally enforceable permit, or the Clean Air Act.

## **Attachments**

**Applicable Requirements Summary**

**Additional Monitoring Requirements**

**Permit Shield**

**New Source Review Authorization References**

### **Applicable Requirements Summary**

<b>Unit Summary .....</b>	<b>19</b>
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<b>Applicable Requirements Summary .....</b>	<b>21</b>
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Note: A “none” entry may be noted for some emission sources in this permit’s “Applicable Requirements Summary” under the heading of “Monitoring and Testing Requirements” and/or “Recordkeeping Requirements” and/or “Reporting Requirements.” Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (30 TAC § 122.144), Reporting Terms and Conditions (30 TAC § 122.145), and Compliance Certification Terms and Conditions (30 TAC § 122.146) continue to apply.

### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
AUX3	Boilers/Steam Generators/Steam Generating Units	N/A	60Dc	40 CFR Part 60, Subpart Dc	No changing attributes.
CTDB3-A	Emission Points/Stationary Vents/Process Vents	N/A	R1151	30 TAC Chapter 111, Nonagricultural Processes	No changing attributes.
CTDB3-A	Emission Points/Stationary Vents/Process Vents	N/A	R1111	30 TAC Chapter 111, Visible Emissions	No changing attributes.
CTDB3-A	Stationary Turbines	N/A	60KKKK-1	40 CFR Part 60, Subpart KKKK	75% of Peak = The combustion turbine does not operate at less than 75% of peak load or at temperatures less than zero degrees F.
CTDB3-A	Stationary Turbines	N/A	60KKKK-2	40 CFR Part 60, Subpart KKKK	75% of Peak = The combustion turbine operates at less than 75% of peak load or at temperatures less than zero degrees F., 30 MW = The combustion turbine has an output of 30 MW or greater.
CTDB3-A	Stationary Turbines	N/A	60TTTT	40 CFR Part 60, Subpart TTTT	No changing attributes.
CTDB3-B	Emission Points/Stationary Vents/Process Vents	N/A	R1151	30 TAC Chapter 111, Nonagricultural Processes	No changing attributes.
CTDB3-B	Emission Points/Stationary Vents/Process Vents	N/A	R1111	30 TAC Chapter 111, Visible Emissions	No changing attributes.
CTDB3-B	Stationary Turbines	N/A	60KKKK-1	40 CFR Part 60, Subpart	75% of Peak = The combustion

### Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
				KKKK	turbine does not operate at less than 75% of peak load or at temperatures less than zero degrees F.
CTDB3-B	Stationary Turbines	N/A	60KKKK-2	40 CFR Part 60, Subpart KKKK	75% of Peak = The combustion turbine operates at less than 75% of peak load or at temperatures less than zero degrees F., 30 MW = The combustion turbine has an output of 30 MW or greater.
CTDB3-B	Stationary Turbines	N/A	60TTTT	40 CFR Part 60, Subpart TTTT	No changing attributes.
EG3	Stationary Reciprocating Int. Comb. Engines	N/A	60III	40 CFR Part 60, Subpart III	No changing attributes.
EG3	Stationary Reciprocating Int. Comb. Engines	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
FWP2	Stationary Reciprocating Int. Comb. Engines	N/A	60III	40 CFR Part 60, Subpart III	No changing attributes.
FWP2	Stationary Reciprocating Int. Comb. Engines	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
AUX3	EU	60Dc	SO <sub>2</sub>	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a) § 60.48c(j)
AUX3	EU	60Dc	PM	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a) § 60.48c(j)
AUX3	EU	60Dc	PM (OPACITY)	40 CFR Part 60, Subpart Dc	§ 60.40c(a)	This subpart applies to each steam generating unit constructed, reconstructed, or modified after 6/9/89 and that has a maximum design heat input capacity of 2.9-29 megawatts (MW).	None	§ 60.48c(g)(1) § 60.48c(g)(2) § 60.48c(g)(3) § 60.48c(i)	[G]§ 60.48c(a) § 60.48c(j)
CTDB3-A	EP	R1151	PM	30 TAC Chapter 111, Nonagricultural Processes	§ 111.151(a) § 111.151(c)	No person may cause, suffer, allow, or permit emissions of particulate matter from any source to exceed the allowable rates specified in Table 1 as follows, except as provided by §111.153 of this title (relating to	** See Periodic Monitoring Summary	None	None

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						Emissions Limits for Steam Generators).			
CTDB3-A	EP	R1111	PM (OPACITY)	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(C) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 15% averaged over a six minute period for any source with a total flow rate of at least 100,000 acfm unless a CEMS is installed.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
CTDB3-A	EU	60KKKK-1	NO <sub>x</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4320(a)-Table 1 § 60.4320(a) § 60.4320(b) § 60.4333(a) § 60.4333(b)(1) § 60.4335(b)(1) [G]§ 60.4345	New, modified, or reconstructed turbine firing natural gas with a heat input at peak load > 850 MMBtu/h must meet the nitrogen oxides emission standard of 15 ppm at 15 percent O <sub>2</sub> .	§ 60.4333(b)(1) § 60.4335(b)(1) § 60.4340(b)(1) [G]§ 60.4345 § 60.4350(a) § 60.4350(b) § 60.4350(c) § 60.4350(d) § 60.4350(e) § 60.4350(f) § 60.4350(h) [G]§ 60.4400(a) § 60.4400(b) § 60.4400(b)(2) § 60.4400(b)(4) § 60.4400(b)(5) § 60.4400(b)(6) [G]§ 60.4405	[G]§ 60.4345 § 60.4350(b)	[G]§ 60.4345 § 60.4350(d) § 60.4375(a) § 60.4380 [G]§ 60.4380(b) § 60.4395
CTDB3-A	EU	60KKKK-1	SO <sub>2</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4330(a)(2) § 60.4333(a)	You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO <sub>2</sub> /J (0.060 lb	§ 60.4365 § 60.4365(a) § 60.4415(a) § 60.4415(a)(1) § 60.4415(a)(1)(ii)	§ 60.4365(a)	§ 60.4375(a)



### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						SO <sub>2</sub> /MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.			
CTDB3-A	EU	60KKKK-2	NO <sub>x</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4320(a)-Table 1 § 60.4320(a) § 60.4320(b) § 60.4333(a) § 60.4333(b)(1) § 60.4335(b)(1) [G]§ 60.4345	Turbines operating at less than 75 percent of peak load, or turbines operating at temperatures less than 0 degrees F with greater than 30 MW output must meet the nitrogen oxides emission standard of 96 ppm at 15 percent O <sub>2</sub> .	§ 60.4333(b)(1) § 60.4335(b)(1) § 60.4340(b)(1) [G]§ 60.4345 § 60.4350(a) § 60.4350(b) § 60.4350(c) § 60.4350(d) § 60.4350(e) § 60.4350(f) § 60.4350(h) [G]§ 60.4400(a) § 60.4400(b) § 60.4400(b)(2) § 60.4400(b)(4) § 60.4400(b)(5) § 60.4400(b)(6) [G]§ 60.4405	[G]§ 60.4345 § 60.4350(b)	[G]§ 60.4345 § 60.4350(d) § 60.4375(a) § 60.4380 [G]§ 60.4380(b) § 60.4395
CTDB3-A	EU	60KKKK-2	SO <sub>2</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4330(a)(2) § 60.4333(a)	You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO <sub>2</sub> /J (0.060 lb SO <sub>2</sub> /MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this	§ 60.4365 § 60.4365(a) § 60.4415(a) § 60.4415(a)(1) § 60.4415(a)(1)(ii)	§ 60.4365(a)	§ 60.4375(a)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						requirement.			
CTDB3-A	EU	60TTTT	CO <sub>2</sub>	40 CFR Part 60, Subpart TTTT	§ 60.5509 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 60, Subpart TTTT
CTDB3-B	EP	R1151	PM	30 TAC Chapter 111, Nonagricultural Processes	§ 111.151(a) § 111.151(c)	No person may cause, suffer, allow, or permit emissions of particulate matter from any source to exceed the allowable rates specified in Table 1 as follows, except as provided by §111.153 of this title (relating to Emissions Limits for Steam Generators).	** See Periodic Monitoring Summary	None	None
CTDB3-B	EP	R1111	PM (OPACITY)	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(C) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 15% averaged over a six minute period for any source with a total flow rate of at least 100,000 acfm unless a CEMS is installed.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
CTDB3-B	EU	60KKKK-1	NO <sub>x</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4320(a)-Table 1	New, modified, or reconstructed turbine	§ 60.4333(b)(1) § 60.4335(b)(1)	[G]§ 60.4345 § 60.4350(b)	[G]§ 60.4345 § 60.4350(d)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4320(a) § 60.4320(b) § 60.4325 § 60.4333(a) § 60.4333(b)(1) § 60.4335(b)(1) [G]§ 60.4345	firing natural gas with a heat input at peak load > 850 MMBtu/h must meet the nitrogen oxides emission standard of 15 ppm at 15 percent O <sub>2</sub> .	[G]§ 60.4345 § 60.4350(a) § 60.4350(b) § 60.4350(c) § 60.4350(d) § 60.4350(e) § 60.4350(f) § 60.4350(h) [G]§ 60.4400(a) § 60.4400(b) § 60.4400(b)(1) § 60.4400(b)(2) § 60.4400(b)(4) § 60.4400(b)(5) § 60.4400(b)(6) [G]§ 60.4405		§ 60.4375(a) § 60.4380 [G]§ 60.4380(b) § 60.4395
CTDB3-B	EU	60KKKK-1	SO <sub>2</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4330(a)(2) § 60.4333(a)	You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO <sub>2</sub> /J (0.060 lb SO <sub>2</sub> /MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.	§ 60.4365 § 60.4365(a) § 60.4415(a) § 60.4415(a)(1) § 60.4415(a)(1)(ii)	§ 60.4365(a)	§ 60.4375(a)
CTDB3-B	EU	60KKKK-2	NO <sub>x</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4320(a)-Table 1 § 60.4320(a) § 60.4320(b) § 60.4325 § 60.4333(a) § 60.4333(b)(1)	Turbines operating at less than 75 percent of peak load, or turbines operating at temperatures less than 0 degrees F with greater than 30 MW output must	§ 60.4333(b)(1) § 60.4335(b)(1) [G]§ 60.4345 § 60.4350(a) § 60.4350(b) § 60.4350(c) § 60.4350(d)	[G]§ 60.4345 § 60.4350(b)	[G]§ 60.4345 § 60.4350(d) § 60.4375(a) § 60.4380 [G]§ 60.4380(b) § 60.4395

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4335(b)(1) [G]§ 60.4345	meet the nitrogen oxides emission standard of 96 ppm at 15 percent O <sub>2</sub> .	§ 60.4350(e) § 60.4350(f) § 60.4350(h) [G]§ 60.4400(a) § 60.4400(b) § 60.4400(b)(1) § 60.4400(b)(2) § 60.4400(b)(4) § 60.4400(b)(5) § 60.4400(b)(6) [G]§ 60.4405		
CTDB3-B	EU	60KKKK-2	SO <sub>2</sub>	40 CFR Part 60, Subpart KKKK	§ 60.4330(a)(2) § 60.4333(a)	You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO <sub>2</sub> /J (0.060 lb SO <sub>2</sub> /MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.	§ 60.4365 § 60.4365(a) § 60.4415(a) § 60.4415(a)(1) § 60.4415(a)(1)(ii)	§ 60.4365(a)	§ 60.4375(a)
CTDB3-B	EU	60TTTT	CO <sub>2</sub>	40 CFR Part 60, Subpart TTTT	§ 60.5509 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 60, Subpart TTTT	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 60, Subpart TTTT

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
EG3	EU	60III	CO	40 CFR Part 60, Subpart III	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a CO emission limit of 3.5 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
EG3	EU	60III	NMHC and NO <sub>x</sub>	40 CFR Part 60, Subpart III	§ 60.4205(b) § 60.4202(a)(2) § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	Owners and operators of emergency stationary CI ICE, that are not fire pump engines, with a maximum engine power greater than 560 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with an NMHC+NO <sub>x</sub> emission limit of 6.4 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
EG3	EU	60III	PM	40 CFR Part 60, Subpart III	§ 60.4205(b) § 60.4202(a)(2) § 60.4206	Owners and operators of emergency stationary CI ICE, that are not fire	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218 § 89.112(a)	pump engines, with a maximum engine power greater than or equal to 130 KW and less than or equal to 2237 KW and a displacement of less than 10 liters per cylinder and is a 2007 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as stated in 40 CFR 60.4202(a)(2) and 40 CFR 89.112(a).			
EG3	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.	None	None	None
FWP2	EU	60IIII	NMHC and NO <sub>x</sub>	40 CFR Part 60, Subpart IIII	§ 60.4205(c)-Table 4 § 60.4206 § 60.4207(b)	Owners and operators of emergency stationary fire pump CI ICE with a maximum engine power	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218	greater than or equal to 130 KW and less than or equal to 560 KW and a displacement of less than 30 liters per cylinder and is a 2009 model year and later must comply with an NMHC+NOx emission limit of 4.0 g/KW-hr, as listed in Table 4 to this subpart.			
FWP2	EU	60III	PM	40 CFR Part 60, Subpart III	§ 60.4205(c)-Table 4 § 60.4206 § 60.4207(b) [G]§ 60.4211(a) § 60.4211(c) [G]§ 60.4211(f) § 60.4218	Owners and operators of emergency stationary fire pump CI ICE with a maximum engine power greater than or equal to 130 KW and less than or equal to 560 KW and a displacement of less than 30 liters per cylinder and is a 2009 model year and later must comply with a PM emission limit of 0.20 g/KW-hr, as listed in Table 4 to this subpart.	§ 60.4209(a)	§ 60.4214(b)	[G]§ 60.4214(d)
FWP2	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6590(c)	Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart III, for	None	None	None

### Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines as applicable. No further requirements apply for such engines under this part.			



**Additional Monitoring Requirements**

**Periodic Monitoring Summary ..... 32**

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: CTDB3-A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: PM (OPACITY)	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: It is a deviation if an alternative fuel is fired, either alone or in combination with the specified fuel (pipeline quality).	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: CTDB3-A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Nonagricultural Processes	SOP Index No.: R1151
Pollutant: PM	Main Standard: § 111.151(a)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: It is a deviation if an alternative fuel is fired, either alone or in combination with the specified fuel (pipeline quality)	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: CTDB3-B	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111
Pollutant: PM (OPACITY)	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: It is a deviation if an alternative fuel is fired, either alone or in combination with the specified fuel (pipeline quality).	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	

### Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: CTDB3-B	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Nonagricultural Processes	SOP Index No.: R1151
Pollutant: PM	Main Standard: § 111.151(a)
Monitoring Information	
Indicator: Fuel Type	
Minimum Frequency: Annually	
Averaging Period: n/a	
Deviation Limit: It is a deviation if an alternative fuel is fired, either alone or in combination with the specified fuel (pipeline quality).	
Periodic Monitoring Text: Record the type of fuel used by the unit. If an alternate fuel is fired, either alone or in combination with the specified gas, it shall be considered and reported as a deviation.	

**Permit Shield**

**Permit Shield ..... 37**

### Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
CTDB3-A	N/A	40 CFR Part 60, Subpart Db	The heat recovery steam generators and duct burners are exempt from the requirements of 40 CFR Part 60, Subparts Da, Db, & Dc because they are associated with the stationary combustion turbines subject to 40 CFR Part 60, Subpart KKKK.
CTDB3-A	N/A	40 CFR Part 60, Subpart Db	The duct burners are exempt from the requirements of 40 CFR Part 60, Subparts Da, Db, & Dc because they are subject to 40 CFR Part 60, Subpart KKKK as identified in the Applicable Requirement Summary.
CTDB3-B	N/A	40 CFR Part 60, Subpart Db	The heat recovery steam generators and duct burners are exempt from the requirements of 40 CFR Part 60, Subparts Da, Db, & Dc because they are associated with the stationary combustion turbines subject to 40 CFR Part 60, Subpart KKKK.
CTDB3-B	N/A	40 CFR Part 60, Subpart Db	The duct burners are exempt from the requirements of 40 CFR Part 60, Subparts Da, Db, & Dc because are subject to 40 CFR Part 60, Subpart KKKK as identified in the Applicable Requirement Summary.
DSL-TK1	N/A	30 TAC Chapter 115, Loading and Unloading of VOC	The tank is exempt because all loading and unloading of VOC other than gasoline in covered attainment counties is exempt from the requirements of Division 1.

### Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit/Group/Process		Regulation	Basis of Determination
ID No.	Group/Inclusive Units		
DSL-TK1	N/A	40 CFR Part 60, Subpart Kb	The tank is not subject to the requirements of subpart Kb because it has a design capacity less than 75 cubic meters.
DSL-TK2	N/A	30 TAC Chapter 115, Loading and Unloading of VOC	The tank is exempt because all loading and unloading of VOC other than gasoline in covered attainment counties is exempt from the requirements of Division 1.
DSL-TK2	N/A	40 CFR Part 60, Subpart Kb	The tank is not subject to the requirements of subpart Kb because it has a design capacity less than 75 cubic meters.



**New Source Review Authorization References**

<b>New Source Review Authorization References.....</b>	<b>40</b>
<b>New Source Review Authorization References by Emission Unit .....</b>	<b>41</b>

### New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Prevention of Significant Deterioration (PSD) Permits	
PSD Permit No.: GHGPSDTX112	Issuance Date: 04/01/2015
PSD Permit No.: PSDTX1410	Issuance Date: 04/01/2015
Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 119365	Issuance Date: 04/01/2015
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 106.227	Version No./Date: 09/04/2000
Number: 106.263	Version No./Date: 11/01/2011
Number: 106.265	Version No./Date: 09/04/2000
Number: 106.454	Version No./Date: 11/01/2001
Number: 106.472	Version No./Date: 09/04/2000
Number: 106.473	Version No./Date: 09/04/2000
Number: 106.532	Version No./Date: 09/04/2000

### **New Source Review Authorization References by Emissions Unit**

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

<b>Unit/Group/Process ID No.</b>	<b>Emission Unit Name/Description</b>	<b>New Source Review Authorization</b>
AUX3	AUXILIARY BOILER 3	119365
CTDB3-A	CT/HRSG3-A/UNIT 1	119365
CTDB3-B	CT/HRSG3-B/UNIT 2	119365
DSL-TK1	DIESEL TANK 1	119365
DSL-TK2	DIESEL TANK 2	119365
EG3	EMERGENCY GENERATOR UNIT 3	119365
FWP2	FIRE WATER PUMP UNIT 2	119365

**Appendix A**

<b>Acronym List .....</b>	<b>43</b>
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## Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM .....	actual cubic feet per minute
AMOC .....	alternate means of control
ARP .....	Acid Rain Program
ASTM .....	American Society of Testing and Materials
B/PA .....	Beaumont/Port Arthur (nonattainment area)
CAM .....	Compliance Assurance Monitoring
CD .....	control device
COMS .....	continuous opacity monitoring system
CVS .....	closed-vent system
D/FW .....	Dallas/Fort Worth (nonattainment area)
DR .....	Designated Representative
ELP .....	El Paso (nonattainment area)
EP .....	emission point
EPA .....	U.S. Environmental Protection Agency
EU .....	emission unit
FCAA Amendments .....	Federal Clean Air Act Amendments
FOP .....	federal operating permit
GF .....	grandfathered
gr/100 scf .....	grains per 100 standard cubic feet
HAP .....	hazardous air pollutant
H/G/B .....	Houston/Galveston/Brazoria (nonattainment area)
H <sub>2</sub> S .....	hydrogen sulfide
ID No. ....	identification number
lb/hr .....	pound(s) per hour
MMBtu/hr .....	Million British thermal units per hour
MRRT .....	monitoring, recordkeeping, reporting, and testing
NA .....	nonattainment
N/A .....	not applicable
NADB .....	National Allowance Data Base
NO <sub>x</sub> .....	nitrogen oxides
NSPS .....	New Source Performance Standard (40 CFR Part 60)
NSR .....	New Source Review
ORIS .....	Office of Regulatory Information Systems
Pb .....	lead
PBR .....	Permit By Rule
PM .....	particulate matter
ppmv .....	parts per million by volume
PSD .....	prevention of significant deterioration
RO .....	Responsible Official
SO <sub>2</sub> .....	sulfur dioxide
TCEQ .....	Texas Commission on Environmental Quality
TSP .....	total suspended particulate
TVP .....	true vapor pressure
U.S.C. ....	United States Code
VOC .....	volatile organic compound

**Appendix B**

<b>Major NSR Summary Table .....</b>	<b>45</b>
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## Major NSR Summary Table

Permit Number: 119365 and PSDTX1410			Issuance Date: April 1, 2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**	Spec. Cond.	Spec. Cond.	Spec. Cond.
CTDB3-A	GE Model 7HA.02 Combustion Turbine (CT) and 770 MMBtu/hr Duct Burner	NO <sub>x</sub> (Normal Operation) (5)	28.2	184	3, 6, 9, 12, 13, 14, 15, 16, 17, , 22	3, 6, 13, 14, 15, 16, 17, 18, 22, 23, 24	3, 13, 14, 15, 18, 25, 26, 28
		NO <sub>x</sub> (MSS Operation) (6)	512				
		CO (Normal Operation) (5)	34	875			
		CO (MSS Operation) (6)	7,637				
		VOC (Normal Operation) (5)	19.7	179			
		VOC (MSS Operation) (6)	1,324				
		SO <sub>2</sub>	22	23.5			
		PM (7)	43	110			
		PM <sub>10</sub> (7)	43	110			
		PM <sub>2.5</sub> (7)	43	110			
		H <sub>2</sub> SO <sub>4</sub>	17.3	18.4			
		(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	23.3	25			
		NH <sub>3</sub>	52.2	223			
CTDB3-B	GE Model 7HA.02 CT and 770 MMBtu/hr Duct Burner	NO <sub>x</sub> (Normal Operation) (5)	28.2	184	3, 5, 6, 9, 12, 13, 14, 15, 16, 17, 22	3, 6, 13, 14, 15, 16, 17, 18, 22, 23, 24	3, 13,14, 15, 18,25, 26, 28
		NO <sub>x</sub> (MSS Operation) (6)	512				
		CO (Normal Operation) (5)	34	875			
		CO (MSS Operation) (6)	7,637				
		VOC (Normal Operation) (5)	19.7	179			
		VOC (MSS Operation) (6)	1,324				
		SO <sub>2</sub>	22	23.5			
		PM (7)	43	110			
		PM <sub>10</sub> (7)	43	110			
		PM <sub>2.5</sub> (7)	43	110			
		H <sub>2</sub> SO <sub>4</sub>	17.3	18.4			
		(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	23.3	25			
		NH <sub>3</sub>	52.2	223			

## Major NSR Summary Table

Permit Number: 119365 and PSDTX1410			Issuance Date: April 1, 2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**	Spec. Cond.	Spec. Cond.	Spec. Cond.
CT3-ALOV-VNT	CT 1 Lube Oil Vent	VOC	<0.01	0.013	6	6, 24	
		PM	<0.01	0.013			
		PM <sub>10</sub>	<0.01	0.013			
		PM <sub>2.5</sub>	<0.01	0.013			
CT3-BLOV-VNT	CT 2 Lube Oil Vent	VOC	<0.01	0.013	6	6, 24	
		PM	<0.01	0.013			
		PM <sub>10</sub>	<0.01	0.013			
		PM <sub>2.5</sub>	<0.01	0.013			
ST3LOV-VNT	Steam Turbine Lube Oil Vent	VOC	<0.01	0.013	6	6, 24	
		PM	<0.01	0.013			
		PM <sub>10</sub>	<0.01	0.013			
		PM <sub>2.5</sub>	<0.01	0.013			
FWP2	Fire Water Pump 250 Horsepower Diesel Engine	NO <sub>x</sub>	1.5	0.07	3, 6, 9	3, 6, 24	3, 26
		CO	0.22	0.01			
		VOC	0.06	<0.01			
		PM	0.03	<0.01			
		PM <sub>10</sub>	0.03	<0.01			
		PM <sub>2.5</sub>	0.03	<0.01			
		SO <sub>2</sub>	<0.01	<0.01			
EG3	2.0 MW Emergency Generator Diesel Engine	NO <sub>x</sub>	35.3	1.8	3, 6, 9	3, 6, 24	3, 26
		CO	1.9	0.10			
		VOC	0.71	0.04			
		PM	0.16	<0.01			
		PM <sub>10</sub>	0.16	<0.01			
		PM <sub>2.5</sub>	0.16	<0.01			
		SO <sub>2</sub>	0.03	<0.01			



## Major NSR Summary Table

Permit Number: 119365 and PSDTX1410			Issuance Date: April 1, 2015				
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lb/hr	TPY**	Spec. Cond.	Spec. Cond.	Spec. Cond.
AUX3	Auxiliary Boiler 40 MMBtu/hr (8)	NO <sub>x</sub>	1.5	6.5	3, 6, 9, 12, 13, 14, 16	3, 6, 13, 14, 16, 18, 23, 24	3, 13, 14, 18, 26
		CO	1.5	6.5			
		VOC	0.22	0.96			
		PM	0.20	0.88			
		PM <sub>10</sub>	0.20	0.88			
		PM <sub>2.5</sub>	0.20	0.88			
		SO <sub>2</sub>	0.23	0.25			
NG-FUG	Natural Gas Fugitives (9)	VOC	0.05	0.22			
NH3-FUG	Ammonia Fugitives (9)	NH <sub>3</sub>	0.12	0.51	11	11, 24	
DSL-TK1	Diesel Fuel Storage Tank for Emergency Generator	VOC	0.11	<0.01	6	6, 24	
DSL-TK2	Diesel Fuel Storage Tank for Fire Pump Engine	VOC	0.02	<0.01	6	6, 24	
MSS FUG	Inherently Low-Emitting Maintenance Activities (9)	NO <sub>x</sub>	<0.01	<0.01	6, 22	6, 22, 24	
		CO	<0.01	<0.01			
		VOC	0.08	<0.01			
		PM	0.09	0.02			
		PM <sub>10</sub>	0.09	0.02			
		PM <sub>2.5</sub>	0.09	0.02			
		NH <sub>3</sub>	<0.01	<0.01			

**Footnotes:**

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3)
  - NO<sub>x</sub> - total oxides of nitrogen
  - CO - carbon monoxide
  - VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code (TAC) § 101.1
  - SO<sub>2</sub> - sulfur dioxide
  - PM - particulate matter emissions, as defined in Title 30 TAC § 101.1, including PM<sub>10</sub> and PM<sub>2.5</sub>
  - PM<sub>10</sub> - particulate matter emissions equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>
  - PM<sub>2.5</sub> - direct particulate matter emissions equal to or less than 2.5 microns in diameter

$\text{NH}_3$  - ammonia

$\text{H}_2\text{SO}_4$  - sulfuric acid

$(\text{NH}_4)_2\text{SO}_4$  - ammonium sulfate

- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
- (5) Normal operation is defined in Special Condition No. 4.
- (6) MSS operation is defined in Special Condition No. 21. For pollutants whose emissions during planned MSS activities are measured using a CEMS, the MSS lbs/hr limits apply during each clock hour that includes one or more minutes of MSS activities. During all other clock hours, the normal lbs/hr limits apply. Annual emission limits include both normal and MSS operation emissions.
- (7) PM/PM<sub>10</sub>/PM<sub>2.5</sub> includes  $\text{H}_2\text{SO}_4$  and  $(\text{NH}_4)_2\text{SO}_4$ .
- (8) Auxiliary boiler hourly and annual limits include both normal and MSS operation emissions.
- (9) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.

## Major NSR Summary Table

Permit Number: GHGPSDTX112			Issuance Date: April 1, 2015			
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			TPY (4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
CTDB3-A	GE Model 7HA.02 Combustion Turbine (CT) and 770 MMBtu/hr Duct Burner	CO <sub>2</sub>	1,975,187	3, 8, 13, 14, 16	3, 13, 14, 15, 16, 19	3, 13, 20
		CH <sub>4</sub>	37			
		N <sub>2</sub> O	3.7			
		CO <sub>2</sub> e	1,977,194			
CTDB3-B	GE Model 7HA.02 CT and 770 MMBtu/hr Duct Burner	CO <sub>2</sub>	1,975,187	3, 8, 13, 14, 16	3, 13, 14, 15, 16, 19	3, 13, 20
		CH <sub>4</sub>	37			
		N <sub>2</sub> O	3.7			
		CO <sub>2</sub> e	1,977,194			
FWP2	Fire Water Pump 250 Horsepower Diesel Engine	CO <sub>2</sub>	16.4	8, 9	19	
		CH <sub>4</sub>	<0.1			
		N <sub>2</sub> O	<0.1			
		CO <sub>2</sub> e	16.5			
EG3	2.0 MW Emergency Generator Diesel Engine	CO <sub>2</sub>	155.3	8, 9	19	
		CH <sub>4</sub>	<0.1			
		N <sub>2</sub> O	<0.1			
		CO <sub>2</sub> e	156			

## Major NSR Summary Table

Permit Number: GHGPSDTX112			Issuance Date: April 1, 2015			
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			TPY (4)	Spec. Cond.	Spec. Cond.	Spec. Cond.
AUX3	Auxiliary Boiler 40 MMBtu/hr	CO <sub>2</sub>	20,494	8, 13, 14, 17	13, 14, 19	20
		CH <sub>4</sub>	0.4			
		N <sub>2</sub> O	<0.1			
		CO <sub>2</sub> e	20,515			
SF6-FUG	SF <sub>6</sub> Insulated Equipment (5)	SF <sub>6</sub>	0.003	10	19	
		CO <sub>2</sub> e	66			
NG-FUG	Natural Gas Fugitives (5)	CH <sub>4</sub>	19	10	19	
		CO <sub>2</sub>	1.7			
		CO <sub>2</sub> e	476.3			
MSS FUG	Natural Gas Venting from CT Shutdown and CT, Small Equipment, and Component Maintenance (5)	CH <sub>4</sub>	0.1			
		CO <sub>2</sub>	<0.1			
		CO <sub>2</sub> e	2.5			
Total Sitewide GHG Emissions (6)		CO <sub>2</sub>	3,971,041			
		CH <sub>4</sub>	92.7			
		N <sub>2</sub> O	7.4			
		SF <sub>6</sub>	0.003			
		CO <sub>2</sub> e	3,975,621			

**Footnotes:**

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) CO<sub>2</sub> - carbon dioxide  
N<sub>2</sub>O - nitrous oxide  
CH<sub>4</sub> - methane  
SF<sub>6</sub>- sulfur hexafluoride  
CO<sub>2</sub>e - carbon dioxide equivalents, based on the following Global Warming Potentials from 40 CFR Part 98, subpart A, Table A-1, effective January 1, 2015: CO<sub>2</sub> (1), CH<sub>4</sub> (25), N<sub>2</sub>O (298), and SF<sub>6</sub> (22,800)
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. Annual emission limits include both normal and maintenance, startup, and shutdown (MSS) emissions.
- (5) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.
- (6) Total emissions include the potential to emit for all listed sources. Totals are given for informational purposes only and do not constitute emission limits.



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
AIR QUALITY PERMIT



*A Permit Is Hereby Issued To*  
**Colorado Bend II Power, LLC**  
*Authorizing the Construction and Operation of the*  
**Colorado Bend II Power Project**  
*Located near Wharton, Wharton County, Texas at*  
Latitude 29° 17' 12" Longitude -96° 3' 56"

Permits: 119365 and PSDTX1410

Issuance Date : April 1, 2015

Expiration Date: April 1, 2025

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code 116.116 (30 TAC 116.116)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC 116.115(b)(2)(B)(iii)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC 116.115(b)(2)(F)]
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with 30 TAC 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code (THSC) 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.

## Special Conditions

Permit Numbers 119365 and PSDTX1410

### Emission Rates and Permit Representations

1. This permit authorizes only those sources of emissions listed in the attached tables entitled “Emission Sources - Maximum Allowable Emission Rates” (MAERT), “Attachment A”, and “Attachment B” and those sources are limited to the emission limits and other conditions specified on the attached MAERT. This permit authorizes planned maintenance, startup, and shutdown (MSS) activities which comply with the emission limits in the MAERT.
2. Emission limits are based on representations in the permit application dated September 14, 2014, as subsequently updated.

### Federal Applicability

3. The sources identified in this condition are subject to and shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations (40 CFR) as follows:

- (A) In 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS):

Source	Emission Point Number (EPN)	Subpart	Standards of Performance for:
Combustion Turbines and Duct Burners	CTDB3-A CTDB3-B	KKKK	Stationary Gas Turbines
Auxiliary Boiler	AUX3	Dc	Industrial-Commercial-Institutional Steam Generating Units
Fire Water Pump Engine	FWP2	IIII	Stationary Compression-Ignition Internal Combustion Engines
Emergency Generator Engine	EG3		
All of the above		A	General Conditions

- (B) In 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (HAP) for Source Categories:

Source	EPN	Subpart	Standards for HAP for:
Fire Water Pump Engine	FWP2	ZZZZ <sup>1</sup>	Stationary Reciprocating Internal Combustion Engines <sup>1</sup>
Emergency Generator Engine	EG3		
Both of the above		A <sup>1</sup>	General Conditions <sup>1</sup>

<sup>1</sup>According to 40 CFR § 63.6590(c)(1), compliance with Part 63 is met by compliance with NSPS Subpart IIII.

### Operating Limitations, Performance Standards, and Fuel Specifications

4. This permit authorizes two natural gas-fired combustion turbines (CTs) to operate in combined cycle with heat recovery steam generators (HRSGs) and a steam turbine. Each CT shaft drives an electric generator and each HRSG supplies steam to a single steam turbine which drives an additional electric generator. The CTs may employ evaporative cooling for power enhancement. Each HRSG is equipped with natural gas-fired duct burners. The duct burners in each HRSG are limited to a maximum heat input of 770 million British thermal units (Btu) per hour (MMBtu/hr), based on the high heating value of the fuel. Exhaust emissions are controlled using selective catalytic reduction (SCR) and oxidation catalysts located in the HRSGs.
  - A. This permit authorizes construction and operation of two General Electric model 7HA.02 CTs.
  - B. The CTs are authorized to operate in normal operation, defined as operation anywhere between and including 45 percent (%) and 100% of full load and the SCR has been placed into operation.
  - C. The CTs are authorized to operate at reduced load, defined as operation below 45% of full load that is not MSS operation.
  - D. The CTs are authorized for:
    - (1) Startup operation, as defined in Special Condition No. 21.A.(1).
    - (2) Shutdown operation, as defined in Special Condition No. 21.A.(2).
  - E. The CTs are authorized for planned maintenance as described in Attachments A and B, subject to the conditions of this permit and the representations in the permit application.
5. A. The concentration of emissions from each CT/HRSG while operating in normal operation, as defined in Special Condition No. 4.B., shall not exceed the following concentration limits expressed in parts per million by volume dry (ppmvd), at 15% oxygen (O<sub>2</sub>).

#### Concentration Limits for CTs/HRSGs in Normal Operation

Pollutant	Concentration	Averaging time
Nitrogen oxides (NO <sub>x</sub> )	2.0	24-hour rolling average
Carbon monoxide (CO)	4.0	3-hour rolling average
Ammonia (NH <sub>3</sub> ) <sup>1</sup>	10.0	1-hour average
Volatile organic compounds (VOC) <sup>2</sup>	4.0	3-hour average

<sup>1</sup>A 24-hour compliance averaging time for NH<sub>3</sub> applies if a continuous monitoring method is selected under Special Condition No. 17.A. A one-hour average applies if periodic testing is selected under Special Condition No. 17.B.

<sup>2</sup>Defined as total hydrocarbons minus methane and ethane, calculated as methane.



## Special Conditions

Permits Numbers: 108411 and PSDTX1410

Page 3

- B. The limits in A. of this Special Condition do not apply to a CT/HRSG while operating in reduced load or MSS operation, as described in Special Condition Nos. 4.C, 4.D., and 4.E.
- C. The emissions from each CT/HRSG while operating at reduced load, as described in Special Condition No. 4.C., shall be limited as follows.
- (1) The CTs must operate in dry low-NO<sub>x</sub> mode.
  - (2) Emissions from the CT/HRSGs must not exceed the pound-per-hour emission limits for normal operations in the MAERT.
6. Except during MSS activities, the opacity shall not exceed five percent averaged over a six-minute period from each stack. During MSS activities, the opacity shall not exceed 15 percent averaged over a six-minute period from each stack. Each determination shall be made by first observing for visible emissions while the emission source is in operation. Observations shall be made at least 15 feet and no more than 0.25 mile from the emission point. If visible emissions are observed from an emission point, then the opacity shall be determined and documented within 24 hours for that emission point using 40 CFR Part 60, Appendix A, Test Method 9. As an alternative to Test Method 9, observed opacity may be assumed to exceed the applicable opacity limit and reported as a deviation following applicable procedures. Contributions from uncombined water shall not be included in determining compliance with this condition. Observations shall be performed and recorded quarterly. If the opacity exceeds five percent during normal operations or 15 percent during MSS activities (or, alternatively, is assumed to exceed the applicable limit), corrective action to eliminate the source of visible emissions shall be taken promptly and documented within one week of first observation.
7. The 2,937-horsepower (hp) emergency generator engine (EPN EG3) and the 250-hp fire water pump engine (EPN FWP2) are each limited to 100 hours of non-emergency operation per year, on a rolling 12-month basis.
8. The auxiliary boiler is subject to the following limitations:
- A. Emissions shall not exceed the following concentration limits in ppmvd, at 3% O<sub>2</sub>, on a three-hour average, except while operating on hot standby (firing less than 8 MMBtu/hr) and during periods of planned MSS:

### Concentration Limits

Pollutant	Limit
NO <sub>x</sub>	30
CO	50

- B. Heat input is limited to 40 MMBtu/hr, based on the higher heating value of the natural gas.
9. Fuel usage of the permitted facilities is subject to the following.
- A. The CTs, duct burners, and auxiliary boiler must use pipeline-quality natural gas containing no more than 2.0 grain (gr) on an hourly basis and 0.5 gr on an annual basis of total sulfur per 100 dry standard cubic feet.
  - B. The emergency engines must use diesel fuel containing no more than 0.0015 percent sulfur by weight.
  - C. Firing of any other fuel will require prior authorization from the Texas Commission on Environmental Quality (TCEQ) Air Permits Division.
  - D. Upon request by the Executive Director of the TCEQ or any local air pollution control program having jurisdiction, the permit holder shall provide a sample and/or an analysis of the fuel fired in the CTs, duct burners, auxiliary boiler, or engines, or shall allow an air pollution control agency representative to obtain a sample for analysis.
10. The aqueous  $\text{NH}_3$  storage and delivery system is subject to the following requirements.
- A. The permit holder shall maintain loss prevention and protection measures for the storage system. The storage tank area must be marked and protected so as to protect the area from accidents that could cause a rupture.
  - B. Stored  $\text{NH}_3$  must have a concentration of less than 20%  $\text{NH}_3$  by weight.
  - C. All operating practices and procedures relating to the handling and storage of  $\text{NH}_3$  shall conform to the safety recommendations specified for that compound by guidelines of the American National Standards Institute.
11. Audio, visual, and olfactory (AVO) checks for  $\text{NH}_3$  leaks within the operating area shall be made once a day. Following the detection of a leak, plant personnel shall take one or more of the following actions as soon as practicable:
- A. locate and isolate the leak, if necessary;
  - B. commence repair or replacement of the leaking component; and
  - C. use a leak collection/containment system to control the leak until repair or replacement can be made if immediate repair is not possible.

### **Initial Determination of Compliance**

12. Sampling ports and platforms shall be incorporated into the design of the exhaust stacks identified as EPNs CTDB3-A, CTDB3-B, and AUX3, according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities." Alternate sampling facility designs may be submitted for approval by the TCEQ Regional Director.
13. The permit holder shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from the CTs and the auxiliary boiler to determine initial compliance with all emission limits established for these facilities. Unless otherwise specified in this Special Condition No. 13, the sampling and testing shall be conducted in accordance with the methods and procedures specified in Special Condition No. 14. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at the holder's expense. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling.
  - A. Air contaminants and diluents from the turbines, EPNs CTDB3-A and CTDB3-B, to be sampled and analyzed include (but are not limited to) NO<sub>x</sub>, CO, VOC, sulfur dioxide (SO<sub>2</sub>), NH<sub>3</sub>, particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>), opacity, and O<sub>2</sub>.
  - B. Each CT shall be tested with duct burners at as close to maximum firing rate as possible while the turbine is operating as close to base load as possible.
  - C. Fuel sampling using the methods and procedures of 40 CFR §60.4415(a) may be conducted in lieu of stack sampling for SO<sub>2</sub>. If fuel sampling is used, compliance with SO<sub>2</sub> limits shall be based on 100% conversion of the sulfur in the fuel to SO<sub>2</sub>.
  - D. The auxiliary boiler, EPN AUX3, shall be tested at its maximum firing rate for NO<sub>x</sub>, CO, and O<sub>2</sub>.
  - E. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Air Permits Division. Test waivers and alternate or equivalent procedure proposals for NSPS testing which must have the EPA approval shall be submitted to the TCEQ Air Permits Division in Austin.
  - F. Sampling as required by this condition shall occur within 60 days after achieving the maximum fuel firing rate at which the turbines and duct burners will be operated, but no later than 180 days after initial startup of each unit. Additional sampling shall occur as may be required by the TCEQ or EPA.

14. A. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ "Sampling Procedures Manual", and EPA Test Methods in 40 CFR Part 60, Appendix A, 40 CFR 51, Appendix M, and EPA Conditional Test Methods as follows:
  - (1) Appendix A, Methods 1 through 4, as appropriate, for exhaust flow, diluent, and moisture concentration;
  - (2) Appendix A, Method 6, 6a, 6c or 8 for the concentration of SO<sub>2</sub>;
  - (3) Appendix A, Methods 7E or 20, or equivalent methods for the concentrations of NO<sub>x</sub> and O<sub>2</sub>.
  - (4) Appendix A, Method 9 for opacity (consisting of 30 six-minute readings as provided in 40 CFR §60.11[b]);
  - (5) Appendix A, Method 10 for the concentration of CO;
  - (6) Appendix A, Method 19 for applicable calculation methods;
  - (7) Appendix A, Method 25A, modified to exclude methane and ethane, or Method 18, for the concentration of VOC (to measure total carbon as methane);
  - (8) EPA Conditional Test Method 27 (CTM-027) for NH<sub>3</sub>.
  - (9) Appendix M, Methods 201A and 202, or Appendix A, Test Method 5, modified to include back half condensibles, for the concentration of PM<sub>10</sub>;
  - (10) Any variations from those procedures must be approved by the Executive Director of the TCEQ or his designated representative prior to sampling.
- B. The TCEQ Houston Regional Office shall be given notice as soon as testing is scheduled but not less than 30 days prior to sampling to schedule a pretest meeting.
  - (1) The notice shall include:
    - (a) Date for pretest meeting.
    - (b) Date sampling will occur.
    - (c) Name of firm conducting sampling.
    - (d) Type of sampling equipment to be used.

- (e) Method or procedure to be used in sampling, including methods to demonstrate compliance with emission standards found in 40 CFR Part 60, Subpart KKKK.
    - (f) Procedure used to determine turbine loads during and after the sampling period.
  - (2) The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.
  - (3) Prior to the pretest meeting, a written proposed description of any deviation from sampling procedures specified in permit conditions or TCEQ or EPA sampling procedures shall be made available to the TCEQ. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.
- C. Copies of the final sampling report shall be forwarded to the TCEQ and EPA within 60 days after sampling is completed. Sampling reports shall comply with Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:
- One copy to the EPA Region 6 Office, Dallas.
- Two electronic copies and one paper copy to the TCEQ Houston Regional Office.

### **Continuous Determination of Compliance**

15. The permit holder shall install, calibrate, maintain, and operate a continuous emissions monitoring systems (CEMS) to measure and record the concentrations of NO<sub>x</sub>, CO, and diluent (O<sub>2</sub> or carbon dioxide [CO<sub>2</sub>]) from each CT/HRSG exhaust stack, EPNs CTDB3-A and CTDB3-B.
- A. The NO<sub>x</sub> and diluent CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable performance specifications in 40 CFR Part 75, Appendices A and B. The requirements of 40 CFR Part 75, Appendices A and B are deemed an acceptable alternative to the performance specifications and quality assurance requirements of 40 CFR Part 60.
  - B. The CO CEMs shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable performance specifications

in 40 CFR Part 60, Performance Specification No. 4. The CO CEMS shall meet the applicable quality assurance requirements specified in 40 CFR Part 60, Appendix F, except that cylinder gas audits (CGA) conducted in all four quarters may be used in lieu of the annual relative accuracy test audit. Quarterly CGAs shall be conducted at least 60 days apart. A CGA is not required in any quarter in which the CT operates less than 168 hours. Relative accuracy exceedances (as specified in 40 CFR 60, Appendix F), CGA exceedances of  $\pm 15\%$  accuracy, and any CO CEMS downtime shall be reported to the TCEQ Houston Regional Director, and necessary corrective action shall be taken. Supplemental stack sampling may be required at the discretion of the TCEQ Houston Regional Director.

- C. The CEMS shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification.
  - D. For full operating hours, the monitoring data must be reduced to hourly average values at least once every day, using a minimum of four, and normally 60, approximately equally-spaced data points from each one-hour period. For hours in which calibration checks, zero and span adjustments, system breakdowns, or repairs occur, at least two valid data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour) will be sufficient to quality-assure the hour.
  - E. The valid hourly average data from the CEMS shall be averaged over the specified averaging time and the resulting average shall be used to determine compliance with the concentration limits of Special Condition No. 5.A. and in conjunction with the hourly average natural gas fuel consumption data required by Special Condition No. 16, the hourly emission rate limits of the MAERT. Pounds per hour data from each CT/HRSG stack must be summed monthly to tons per year and used to determine compliance with the annual emission limits of the MAERT.
16. The permit holder shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the average hourly natural gas consumption of each CT, duct burner, and the auxiliary boiler. The fuel flow meters shall be accurate to  $\pm 2.0$  percent of the units' maximum flow. The permit holder shall comply with the applicable initial certification and ongoing quality assurance requirements of 40 CFR Part 75, Appendix D for each CT and duct burner.
17. The permit holder shall continuously monitor or periodically measure  $\text{NH}_3$  emissions from EPNs CTDB3-A and CTDB3-B when their respective SCR system is in operation. The emission measurements shall be averaged over the specified averaging time and the resulting average shall be used to demonstrate compliance

with the  $\text{NH}_3$  limits of Special Condition No. 5.A. and the MAERT. Use of one of the following methods [A.(1), A.(2), A.(3), B., or C.] is required.

- A. Continuously monitor or continuously calculate  $\text{NH}_3$ . Install, calibrate, maintain, and operate a CEMS to measure and record  $\text{NH}_3$  directly or calculate  $\text{NH}_3$  through the use of a secondary  $\text{NO}_x$  measurement. The continuously measured or continuously calculated  $\text{NH}_3$  concentrations shall be corrected in accordance with Special Condition No. 5.A. Monitor downtime shall not exceed 5 percent of the time that the CTs were operated over the previous 12-month rolling period. Downtime consists of activities involving calibration, unanticipated power failure, unanticipated equipment malfunction, unplanned maintenance and planned maintenance. The continuous options are as follows.
- (1) Use a CEMS to directly measure and record the concentration of  $\text{NH}_3$ . If there are no applicable  $\text{NH}_3$  CEMS performance specifications in 40 CFR Part 60, contact the TCEQ Air Permits Division in Austin for requirements to be met.
  - (2) Use a second  $\text{NO}_x$  CEMS probe located between the duct burners and the SCR, upstream of the stack  $\text{NO}_x$  CEMS. In association with the SCR efficiency and  $\text{NH}_3$  injection rate, calculate the  $\text{NH}_3$  emissions. This condition shall not be construed to set a minimum  $\text{NO}_x$  reduction efficiency on the SCR unit.
  - (3) Use a dual stream system of  $\text{NO}_x$  CEMS at the exit of the SCR. Route one of the exhaust streams, in an unconverted state, to one  $\text{NO}_x$  CEMS and route the other exhaust stream through a  $\text{NH}_3$  converter to convert  $\text{NH}_3$  to  $\text{NO}_x$  and then to the second  $\text{NO}_x$  CEMS. The  $\text{NH}_3$  emission concentration is the difference between the converted and unconverted  $\text{NO}_x$  CEMS readings.
- B. Periodically measure  $\text{NH}_3$  emissions.
- (1) Use a sorbent or stain tube device specific for  $\text{NH}_3$  measurement in the 5 to 10 ppm range. The frequency of sorbent or stain tube testing shall be daily for the first 60 days of operation, after which the frequency may be reduced to weekly, if operating procedures have been developed to prevent excess amounts of  $\text{NH}_3$  from being introduced in the SCR unit, and operation of the SCR unit has been proven successful with regard to controlling  $\text{NH}_3$  slip. Daily sorbent or stain tube testing shall resume when the catalyst is within 30 days of its useful life expectancy.
  - (2) If the measured or calculated ammonia slip concentration in B.(1) of this Special Condition exceeds 8 ppm at any time, the permit holder shall begin  $\text{NH}_3$  testing by either the Phenol Nitroprusside Method, the

Indophenol Method, or EPA Conditional Test Method (CTM) 27 on a quarterly basis, in addition to the weekly sorbent or stain tube testing. The quarterly testing shall continue until such time as the SCR unit catalyst is replaced; or if the quarterly testing indicates  $\text{NH}_3$  slip is 8 ppm or less, the Phenol Nitroprusside/Indophenol/CTM 27 tests may be suspended until sorbent or stain tube testing again indicate 8 ppm  $\text{NH}_3$  slip or greater.

- C. Any other method used for measuring  $\text{NH}_3$  slip shall require prior approval from the TCEQ Regional Office.
18. If any emission monitor fails to meet specified performance, it shall be repaired or replaced as soon as reasonably possible. If the emission monitor is unable to be returned to service within seven days after the failure is detected, the TCEQ Houston Regional Office must be notified. The permit holder shall develop and document in writing, an operation and maintenance program for the continuous monitors, including stocking necessary spare parts to maintain monitor availability.

### **Maintenance, Startup, and Shutdown (MSS)**

19. Attachment A identifies the inherently low emitting (ILE) planned maintenance activities that this permit authorizes to be performed. Attachment B identifies the planned maintenance activities that are non-ILE planned maintenance activities that this permit authorizes to be performed.
20. The permit holder shall minimize emissions during planned MSS activities by operating the facility and associated air pollution control equipment in accordance with good air pollution control practices, safe operating practices, and protection of the facility.
21. Emissions during planned MSS activities will be minimized by limiting the duration of operation in planned MSS modes as follows:
- A. CTs/Duct Burners
    - (1) Planned startup of each CT is defined as the period that begins when the data acquisition and handling system (DAHS) measures fuel flow to the CT and ends when the CT generator (CTG) load reaches 45% and the SCR has been placed into operation. A planned cold startup for each CT is limited to 360 minutes per event. A planned warm startup for each CT is limited to 240 minutes per event. At the conclusion of the startup period (as defined, or the number of minutes, whichever comes first), the permit holder shall comply with the emission concentration



limitations in Special Condition No. 5.A. and the normal operation emission rates in the MAERT.

- (2) A planned shutdown of each CT is defined as the period that begins when the CTG output drops below 45% load and ends when there is no longer measurable fuel flow to the CT. A planned shutdown for each CT is limited to 60 minutes per event.
- (3) Emissions from CTG optimization activities, as defined in Attachment B, shall be subject to the hourly emission limits for MSS activities from CTs listed on the MAERT. The emissions from such activities shall not exceed the hourly emission limits for normal operation for more than eight hours per calendar day.
- (4) In order to limit maximum short-term ambient concentrations of NO<sub>x</sub>, the CTs of this permit must not be started up while the CTs, identified as EPNs CTDB1-A, CTDB1-B, CTDB2-A, and CTD2-B, authorized by Permit Nos. 77039/PSDTX1060, are starting up.

B. Auxiliary Boiler

- (1) A planned startup is defined as the period that begins when the DAHS detects measurable fuel flow to the boiler and ends when the boiler reaches hot standby or the fuel flow at which the boiler will operate. A planned startup is limited to 120 minutes per event.
- (2) A planned shutdown is defined as the period that begins when the boiler drops below the hot standby fuel flow level and ends when no fuel flow is detected. A planned shutdown is limited to 60 minutes per event.

22. Compliance with the emissions limits for planned MSS activities identified in the MAERT attached to this permit shall be demonstrated as follows.

A. For ILE planned maintenance activities identified in Attachment A of this permit:

- (1) The total emissions from all ILE planned maintenance activities shall be considered to be no more than the estimated potential to emit for those activities that are represented in the permit application.
- (2) The permit holder shall annually confirm the continued validity of the estimated potential to emit represented in the permit application for all ILE planned maintenance activities.

B. For CT and SCR planned MSS activities identified in Attachment B of this permit, the permit holder shall do the following.

- (1) For each pollutant whose emissions are measured with a CEMS that has been certified to measure the pollutant's emissions over the entire range of a planned MSS activity, the permit holder shall measure the emissions of the pollutant during the planned MSS activity using the CEMS.
- (2) For each pollutant whose emissions are not measured with a CEMS in accordance with B.(1) of this condition, determine for each calendar month the emissions of each pollutant listed on the MAERT of this permit from all occurrences of planned MSS activity by calculation. The calculations of the pollutant's hourly and monthly emissions must use data related to the planned MSS activity, identified in turbine operating records, work orders, or equivalent records. The emission rate of the pollutant during the planned MSS activity must be determined either:
  - (a) as represented in the permit application; or
  - (b) as determined with an appropriate method, including but not limited to any of the following methods, provided that the permit holder maintains appropriate records supporting such determination:
    - i. use of emission factor(s), facility-specific parameter(s), and/or engineering knowledge of the facility's operations;
    - ii. use of emissions data measured (by a CEMS or during emissions testing) during the same type of planned MSS activity occurring at or on a similar facility, and correlation of that data with the activity's or facility's relevant operating parameters;
    - iii. use of emissions testing data collected during a planned MSS activity occurring at or on the facility, and correlation of that data with the facility's or activity's relevant operating parameters, such as electric load, temperature, fuel input, or fuel sulfur content;
    - iv. use of parametric monitoring system data applicable to the facility; or
    - v. in accordance with an approved Compliance Assurance Monitoring Plan.

### **Recordkeeping Requirements**

23. The following records shall be kept at the plant for the life of the permit. All records required in this permit shall be made available at the request of personnel from the TCEQ, EPA, or any air pollution control agency with jurisdiction.
  - A. A copy of this permit.
  - B. The permit application dated September 2014 and subsequent representations submitted to the TCEQ.
  - C. A complete copy of the testing reports and records of the initial performance testing completed pursuant to Special Condition No. 14 to demonstrate initial compliance.
  - D. Stack sampling results or other air emissions testing (other than CEMS data) that may be conducted on units authorized under this permit after the date of issuance of this permit.
24. The following information shall be maintained by the permit holder in a form suitable for inspection for a period of five years after collection and shall be made immediately available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:
  - A. Records necessary to demonstrate compliance with the applicable NSPS identified in Special Condition No. 3.
  - B. For pollutants that are monitored by CEMS, hourly records of CT/HRSG emissions and operation to demonstrate compliance with the applicable performance standards of NSPS Subpart KKKK, the concentration limits of Special Condition No. 5, and the hourly and annual emission rates listed in the MAERT, as follows.
    - (1) Continuous emission monitoring data for NO<sub>x</sub>, CO, diluent gases, O<sub>2</sub> or CO<sub>2</sub>, and if applicable, NH<sub>3</sub>. Data retention at intervals less than one hour is not required. Records should identify the times when emissions data have been excluded from the calculation of average emission rates because of MSS or malfunction along with the justification for excluding data. Records should also identify factors used in calculations that are used to demonstrate compliance with emission limits and performance standards.
    - (2) Hourly average CT and duct burner fuel flow, as specified in Special Condition No. 16, to calculate emissions in lbs/hr.

## Special Conditions

Permits Numbers: 119365 and PSDTX1410

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- C. Records of visible emission or opacity observations to demonstrate compliance with Special Condition No. 6.
- D. Records of the monthly hours of operation of the emergency engines in emergency and non-emergency operation to demonstrate compliance with Special Condition No. 7.
- E. Records of the hours of operation, identifying startup and shutdown periods, and fuel usage of the auxiliary boiler to demonstrate compliance with Special Condition Nos. 8 and 21.B.
- F. Fuel purchase records, copies of gas supply contracts, test results, or other information to demonstrate compliance with the CT/HRSG SO<sub>2</sub> emission limits of NSPS Subpart KKKK and fuel sulfur limits of Special Condition No. 9.
- G. Records of AVO checks for ammonia leaks and maintenance performed to any piping and valves in NH<sub>3</sub> service to show compliance with Special Condition No. 11. In addition, written records of any accidental releases, spills, or venting of NH<sub>3</sub> and the corrective action taken.
- H. Files of all CEMS quality assurance measures, calibration checks, adjustments and maintenance performed on these systems to demonstrate compliance with Special Condition Nos. 15 and 18, and as applicable, Special Condition No. 17.A.
- I. As applicable, records of NH<sub>3</sub> emissions sampling and calculations pursuant to Special Condition No. 17.B.
- J. Records of dates and times of CT MSS to demonstrate compliance with Special Condition No. 21.
- K. Records of monitored or calculated MSS emissions to demonstrate compliance with Special Condition No. 22.

## Reporting

- 25. The permit holder shall submit to the TCEQ Houston Regional Office reports as described in 40 CFR § 60.7 in accordance with NSPS requirements. Such reports are required for each emission unit which is required to be continuously monitored pursuant to this permit. In addition to the information specified in 40 CFR § 60.7(c), each report shall contain:
  - A. the hours of operation of the CTs; and

- B. a report summary of the periods of non-complying emissions and CEMS downtimes by cause.

### **As-Built Information**

- 26. The permit holder shall submit to the TCEQ Houston Regional Office and the TCEQ Air Permits Division changed pages to the permit application reflective of the final plans and engineering specifications on the CTs/duct burners, auxiliary boiler, emergency engines, and other sources, including their respective control equipment, no later than 30 days before initial start-up of the CTs. This information shall include:
  - A. All TCEQ Tables in the permit application, updated with manufacturer and other specified data.
  - B. Revised plot plans and equipment drawings necessary to reflect the constructed facility.
  - C. Any updates to CT startup information submitted with the application.
- 27. With the first renewal application for Air Permit No. 77039, due in August, 2015, the permit holder shall submit to the TCEQ Houston Regional Office and the TCEQ Air Permits Division, a permit alteration request to lower the lbs/hr NO<sub>x</sub> emission limits applicable to MSS operation for the existing CT/HRSGs, identified as EPNs CTDB1-A, CTDB1-B, CTDB2-A, and CTD2-B, contained in the MAERT of Air Permit Nos. 77039/PSDTX1060. The revised rates must be based on documented, valid, hourly NO<sub>x</sub> CEMS and fuel flow data that have occurred for these units during planned MSS operations and/or engineering estimates for additional MSS activities not represented in the CEMS data and may include a reasonable margin to account for variability. Periods of unplanned MSS or upset operation are not included in the permit limit.
- 28. No later than 30 months after certification of the NO<sub>x</sub> and CO CEMS required by this permit, the permit holder shall submit to the TCEQ Houston Regional Office and the TCEQ Air Permits Division, a permit alteration request to lower the CT/HRSG permit limits for CO ppm and lbs/hr applicable to normal operations and the NO<sub>x</sub> and CO lbs/hr permit limits applicable to MSS operation, to reflect the NO<sub>x</sub> and CO emissions during the operations monitored by the CEMS and fuel flow meters. The revised rates must be based on documentation of the highest valid hourly NO<sub>x</sub> and CO CEMS and fuel flow data observed, and may include a reasonable margin to account for variability. Periods of unplanned MSS or upset operation are not included in the permit limit. Adjustment of the normal operation CO ppm or lbs/hr emission limit, or the NO<sub>x</sub> or CO MSS lbs/hr emission limit, will only be required if the maximum valid hourly CO ppm, or NO<sub>x</sub> or CO lbs/hr

Special Conditions

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emission rate monitored by the CEMS during the period following CEMS certification is 50% or less of the currently permitted value.

Date: April 1, 2015

## Attachment A

Permit Nos. 119365 and PSDTX1410

<b>Inherently Low-Emitting Planned Maintenance Activities</b>						
Planned Maintenance Activity	Emissions					
	NO <sub>x</sub>	CO	VOC	PM	NH <sub>3</sub>	Opacity
Turbine Washing, Unit On-Line <sup>1</sup>				X		
Air Intake Filter Maintenance				X		X
Annual Catalyst Handling and Maintenance <sup>2</sup>				X		
Ammonia Equipment Maintenance <sup>3</sup>					X	
Gaseous fuel venting <sup>4</sup>			X			
Boiler Tube Cleaning			X			
CEMS Calibration	X	X				
Analytical Equipment and Process Instruments			X			

**Notes:**

<sup>1</sup>Involves use of water only.

<sup>2</sup>Includes but not limited to, replacement, cleaning, activation, and deactivation of SCR and oxidation catalysts.

<sup>3</sup>Includes, but is not limited to:

- (i) repair/replacement of pumps, compressors, valves, pipes, flanges, transport lines, filters and screens in NH<sub>3</sub> service; and
- (ii) off-line NO<sub>x</sub> control device maintenance, including maintenance of the aqueous NH<sub>3</sub> systems associated with the SCR system.

<sup>4</sup>Includes, but is not limited to, venting prior to pipeline pigging, and meter proving.

Date: April 1, 2015

Attachment B

Permit Nos. 119365 and PSDTX1410

<b>Non-Inherently Low Emitting Planned Maintenance Activities</b>							
Planned Maintenance Activity	EPNs	Emissions					
		NO <sub>x</sub>	CO	VOC	PM	NH <sub>3</sub>	SO <sub>2</sub>
CT Maintenance and Tuning <sup>1</sup>	CTDB3-A	X	X	X	X	X	X
SCR Maintenance, Unit On-Line	CTDB3-B	X				X	

Notes:

<sup>1</sup>Includes, but is not limited to:

- (i) leak and operability checks (e.g. CT overspeed trip testing, troubleshooting);
- (ii) generator balancing; and
- (iii) tuning activities that occur during seasonal tuning or after the completion of initial construction, a combustor change-out, a major repair, maintenance to a combustor, or other similar circumstances.

Date: April 1, 2015



# Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 119365 and PSDTX1410

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
CTDB3-A	GE Model 7HA.02 Combustion Turbine (CT) and 770 MMBtu/hr Duct Burner	NO <sub>x</sub> (Normal Operation) (5)	28.2	184
		NO <sub>x</sub> (MSS Operation) (6)	512	
		CO (Normal Operation) (5)	34	875
		CO (MSS Operation) (6)	7,637	
		VOC (Normal Operation) (5)	19.7	179
		VOC (MSS Operation) (6)	1,324	
		SO <sub>2</sub>	22	23.5
		PM (7)	43	110
		PM <sub>10</sub> (7)	43	110
		PM <sub>2.5</sub> (7)	43	110
		H <sub>2</sub> SO <sub>4</sub>	17.3	18.4
		(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	23.3	25
		NH <sub>3</sub>	52.2	223
CTDB3-B	GE Model 7HA.02 CT and 770 MMBtu/hr Duct Burner	NO <sub>x</sub> (Normal Operation) (5)	28.2	184
		NO <sub>x</sub> (MSS Operation) (6)	512	
		CO (Normal Operation) (5)	34	875
		CO (MSS Operation) (6)	7,637	
		VOC (Normal Operation) (5)	19.7	179
		VOC (MSS Operation) (6)	1,324	
		SO <sub>2</sub>	22	23.5
		PM (7)	43	110
		PM <sub>10</sub> (7)	43	110
		PM <sub>2.5</sub> (7)	43	110
		H <sub>2</sub> SO <sub>4</sub>	17.3	18.4
		(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	23.3	25
		NH <sub>3</sub>	52.2	223

## Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
CT3-ALOV-VNT	CT 1 Lube Oil Vent	VOC	<0.01	0.013
		PM	<0.01	0.013
		PM <sub>10</sub>	<0.01	0.013
		PM <sub>2.5</sub>	<0.01	0.013
CT3-BLOV-VNT	CT 2 Lube Oil Vent	VOC	<0.01	0.013
		PM	<0.01	0.013
		PM <sub>10</sub>	<0.01	0.013
		PM <sub>2.5</sub>	<0.01	0.013
ST3LOV-VNT	Steam Turbine Lube Oil Vent	VOC	<0.01	0.013
		PM	<0.01	0.013
		PM <sub>10</sub>	<0.01	0.013
		PM <sub>2.5</sub>	<0.01	0.013
FWP2	Fire Water Pump 250 Horsepower Diesel Engine	NO <sub>x</sub>	1.5	0.07
		CO	0.22	0.01
		VOC	0.06	<0.01
		PM	0.03	<0.01
		PM <sub>10</sub>	0.03	<0.01
		PM <sub>2.5</sub>	0.03	<0.01
		SO <sub>2</sub>	<0.01	<0.01
EG3	2.0 MW Emergency Generator Diesel Engine	NO <sub>x</sub>	35.3	1.8
		CO	1.9	0.10
		VOC	0.71	0.04
		PM	0.16	<0.01
		PM <sub>10</sub>	0.16	<0.01
		PM <sub>2.5</sub>	0.16	<0.01
		SO <sub>2</sub>	0.03	<0.01

## Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
AUX3	Auxiliary Boiler 40 MMBtu/hr (8)	NO <sub>x</sub>	1.5	6.5
		CO	1.5	6.5
		VOC	0.22	0.96
		PM	0.20	0.88
		PM <sub>10</sub>	0.20	0.88
		PM <sub>2.5</sub>	0.20	0.88
		SO <sub>2</sub>	0.23	0.25
NG-FUG	Natural Gas Fugitives (9)	VOC	0.05	0.22
NH <sub>3</sub> -FUG	Ammonia Fugitives (9)	NH <sub>3</sub>	0.12	0.51
DSL-TK1	Diesel Fuel Storage Tank for Emergency Generator	VOC	0.11	<0.01
DSL-TK2	Diesel Fuel Storage Tank for Fire Pump Engine	VOC	0.02	<0.01
MSS FUG	Inherently Low-Emitting Maintenance Activities (9)	NO <sub>x</sub>	<0.01	<0.01
		CO	<0.01	<0.01
		VOC	0.08	<0.01
		PM	0.09	0.02
		PM <sub>10</sub>	0.09	0.02
		PM <sub>2.5</sub>	0.09	0.02
		NH <sub>3</sub>	<0.01	<0.01

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) NO<sub>x</sub> - total oxides of nitrogen  
CO - carbon monoxide  
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code (TAC) § 101.1  
SO<sub>2</sub> - sulfur dioxide  
PM - particulate matter emissions, as defined in Title 30 TAC § 101.1, including PM<sub>10</sub> and PM<sub>2.5</sub>  
PM<sub>10</sub> - particulate matter emissions equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>  
PM<sub>2.5</sub> - direct particulate matter emissions equal to or less than 2.5 microns in diameter  
NH<sub>3</sub> - ammonia  
H<sub>2</sub>SO<sub>4</sub> - sulfuric acid  
(NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> - ammonium sulfate
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.

Emission Sources - Maximum Allowable Emission Rates

- (5) Normal operation is defined in Special Condition No. 4.
- (6) MSS operation is defined in Special Condition No. 21. For pollutants whose emissions during planned MSS activities are measured using a CEMS, the MSS lbs/hr limits apply during each clock hour that includes one or more minutes of MSS activities. During all other clock hours, the normal lbs/hr limits apply. Annual emission limits include both normal and MSS operation emissions.
- (7) PM/PM<sub>10</sub>/PM<sub>2.5</sub> includes H<sub>2</sub>SO<sub>4</sub> and (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>.
- (8) Auxiliary boiler hourly and annual limits include both normal and MSS operation emissions.
- (9) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.

Draft Date: April 1, 2015



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
AIR QUALITY PERMIT



*A Permit Is Hereby Issued To*  
**Colorado Bend II Power, LLC**  
*Authorizing the Construction and Operation of the*  
**Colorado Bend II Power Project**  
*Located near Wharton, Wharton County, Texas at*  
Latitude 29° 17' 12" Longitude -96° 3' 56"

Permit Number: GHGPSDTX112

Issuance Date : April 1, 2015

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code 116.116 (30 TAC 116.116)]
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC 116.120(a), (b) and (c)]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC 116.115(b)(2)(B)(iii)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction; comply with any additional recordkeeping requirements specified in special conditions attached to the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC 116.115(b)(2)(F)]
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification for upsets and maintenance in accordance with 30 TAC 101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules, regulations, and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to a condition of "air pollution" as defined in Texas Health and Safety Code (THSC) 382.003(3) or violate THSC 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.

## **Special Conditions**

Permit Number GHGPSDTX112

### **Emission Rates and Permit Representations**

1. This permit authorizes greenhouse gas (GHG) emissions only from those emission points listed in the attached table entitled “Emission Sources - Maximum Allowable Emission Rates” (MAERT), and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit. Also, this permit authorizes the GHG emissions from planned maintenance, startup, and shutdown (MSS).
2. Emission limits are based on representations in the permit application dated November 12, 2014, as subsequently updated.
3. The combustion turbines (CTs) and duct burners, identified as emission point numbers (EPNs) CTDB3-A and CTDB3-B, shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations in Title 40 Code of Federal Regulations (40 CFR) Part 60, Standards of Performance for Greenhouse Gas Emissions, Subpart KKKK or TTTT, as adopted for GHGs.
4. This permit authorizes two natural gas-fired CTs to operate in combined cycle with heat recovery steam generators (HRSGs) and a steam turbine. Each CT shaft drives an electric generator and each HRSG supplies steam to a single steam turbine which drives a third electric generator. The CTs may employ evaporative cooling for power enhancement. Each HRSG is equipped with natural gas-fired duct burners. The duct burners in each HRSG are limited to a maximum heat input of 770 million British thermal units (Btu) per hour (MMBtu/hr), based on the high heating value (HHV) of the fuel. Exhaust emissions are controlled using selective catalytic reduction (SCR) and oxidation catalysts located in the HRSGs.
  - A. This permit authorizes construction and operation of two General Electric model 7HA.02 CTs.
  - B. The CTs are authorized to operate in normal operation, defined as operation anywhere between and including 45 percent (%) and 100% of full load and the SCR has been placed into operation.
  - C. The CTs are authorized to operate at reduced load, defined as operation below 45% of full load that is not MSS operation.
  - D. The CTs are authorized for MSS operation as defined in TCEQ NSR Air Permit No. 119365, Special Condition No. 21 and Attachments A and B.

### **Emissions Standards, Fuel Specifications, and Operating Specifications**

5. During non-MSS operation, each CT/HRSG must comply with the following performance specifications, on a 12-month rolling average:
  - A. emissions of carbon dioxide (CO<sub>2</sub>) must not exceed 879 pounds per megawatt-hour (lbs/MWh) based on generator gross output; and
  - B. the gross heat rate must not exceed 7,395 Btu (HHV)/kWh.
6. During MSS operation, CO<sub>2</sub> emissions from each CT/HRSG must:
  - A. not exceed 186 tons/hr, on a block one-hour average; and
  - B. be minimized in accordance with the MSS requirements of TCEQ NSR Air Permit No. 119365, Special Condition Nos. 20 and 21.
7. The auxiliary boiler must comply with the following requirements.
  - A. Emissions of CO<sub>2</sub> must not exceed 0.06 ton CO<sub>2</sub> per million Btu (HHV), on a 12-month rolling average.
  - B. The boiler must be operated using good combustion practices.
  - C. The fuel-to-steam efficiency must be at least 77%.
8. Fuel usage of the permitted facilities is subject to the following.
  - A. The CTs, duct burners, and auxiliary boiler must use pipeline-quality natural gas containing no more than 2.0 grain (gr) on an hourly basis and 0.5 gr on an annual basis of total sulfur per 100 dry standard cubic feet.
  - B. The emergency engines must use diesel fuel containing no more than 0.0015 percent sulfur by weight.
  - C. Firing of any other fuel will require prior authorization from the Texas Commission on Environmental Quality (TCEQ) Air Permits Division.
  - D. Upon request by the Executive Director of the TCEQ or any local air pollution control program having jurisdiction, the permit holder shall provide a sample and/or an analysis of the fuel fired in the CTs, duct burners, auxiliary boiler, or engines, or shall allow an air pollution control agency representative to obtain a sample for analysis.
9. The 2,937-horsepower (hp) emergency generator engine (EPN EG3) and the 250-hp fire water pump engine (EPN FWP2) are subject to the following:
  - A. Non-emergency operation is limited to 100 hours, each engine, per year, on a rolling 12-month basis.
  - B. Heat input is limited to:
    - (1) 19 MMBtu/hr, for EPN EG3; and



- (2) 2.0 MMBtu/hr, for EPN FWP2.
  - C. The applicable requirements of 40 CFR 60, Subpart IIII, including the use of a non-resettable elapsed time meter on each engine.
10. The permit holder shall minimize emissions from pressurized components and equipment containing GHG as follows:
- A. Piping and valves in natural gas service within the operating area must be checked daily for leaks using audio, visual, and olfactory (AVO) sensing for natural gas leaks.
  - B. The sulfur hexafluoride (SF<sub>6</sub>)-enclosed circuit breakers used to prevent damage in the event of a power surge must be designed to meet the latest American National Standards Institute (ANSI) C37.013 standard for high-voltage circuit breakers. The circuit breakers must be guaranteed to achieve a SF<sub>6</sub> leak rate of 0.5% by weight or less annually. The circuit breakers must be in a totally enclosed, pressurized compartment equipped with an alarm that signals the plant control room in the event that any circuit breaker loses pressure to the extent that 10% of the SF<sub>6</sub> has leaked.
  - C. As soon as practicable following the detection of a leak, plant personnel shall take one or more of the following actions:
    - (1) Locate and isolate the leak, if necessary.
    - (2) Commence repair or replacement of the leaking component.
    - (3) Use a leak collection or containment system to control the leak until repair or replacement can be made if immediate repair is not possible.

### **Maintenance, Startup, and Shutdown**

11. The permit holder shall minimize uncontrolled venting of natural gas during MSS according to good engineering practices.

### **Shakedown Period**

12. The performance specifications of Special Condition No. 5 do not apply during combustion shakedown. Shakedown is defined as the period beginning with initial startup and ending no later than initial performance testing, during which the permit holder conducts operational and contractual testing and tuning to ensure the safe, efficient and reliable operation of the plant. The shakedown period shall not exceed the time period for performance testing as specified in 40 CFR § 60.8. The permit holder shall operate the facility in a manner consistent with good air pollution practice for minimizing emissions at all times, including during MSS and shakedown.

### **Initial Demonstration of Compliance**

13. A. The permit holder shall perform initial stack sampling or other testing as required to establish the actual pattern and quantities of CO<sub>2</sub> being emitted into the atmosphere from the CT/HRSGs in relation to the electric output of the generators, to forecast initial compliance with the output-specific CO<sub>2</sub> emission limit of Special Condition No. 5.A. and the emission limits of the MAERT. The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at the holder's expense. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling or testing.
- (1) The CO<sub>2</sub> emissions must be sampled from each CT/HRSG stack using EPA Test Method 3a or 3b in 40 CFR 60, Appendix A for the concentration of CO<sub>2</sub>. Exhaust flow rate may be measured or calculated from fuel flow. Generator gross electrical output in MWh must be measured concurrently with CO<sub>2</sub> concentration. Testing should consist of three, one-hour runs.
  - (2) Each CT must be tested with duct burners as close to maximum firing rate as possible while the turbine is operating as close to base load as possible.
  - (3) In accordance with 40 CFR Part 75, Appendix D and 40 CFR Part 60, the permit holder shall ensure that all required fuel flow meters are installed, a periodic schedule for HHV fuel sampling is initiated, and all certification tests are completed on or before the earlier of 90 unit operating days or 180 calendar days after the date the unit commences commercial operation, as defined in 40 CFR Part 75, Appendices D and G.
  - (4) The performance test must be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility. Additional sampling may be required by the TCEQ or EPA.
  - (5) The permit holder must submit a written report of the performance testing results to the TCEQ. The tested output-specific CO<sub>2</sub> emission rate in units of lb CO<sub>2</sub>/MWh for each unit should be reported with the stack test report required for criteria air pollutant initial compliance under TCEQ NSR Air Permit No. 119365, Special Condition No. 14.
  - (6) If the tested output-specific CO<sub>2</sub> emission rate is not consistent with projected compliance with the 12-month rolling emission limit of Special Condition No. 5.A., the stack test report must document the potential to exceed the limit and explain how the facility will achieve compliance with the limit within the initial 12-month rolling time period.

- (B) In conjunction with emission testing of the auxiliary boiler (EPN AUX3) required by Special Condition No. 13.D. of TCEQ NSR Air Permit No. 119365, the permit holder shall perform initial stack sampling of CO<sub>2</sub> emitted from the boiler to demonstrate initial compliance with the lbs/hr CO<sub>2</sub> emission limit in the MAERT of this permit. The concentration of CO<sub>2</sub> shall be determined with Method 3a or 3b in 40 CFR 60, Appendix A. Exhaust flow may be measured or calculated from fuel flow. The results of this testing should be reported with the stack test report for the initial compliance test required in Permit No. 119365.

### **Continuous Demonstration of Compliance**

14. The permit holder shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the natural gas consumption in the CTs, duct burners, and auxiliary boiler, and the gross electric output of the CT and steam turbine generators. The monitoring system data shall be used to demonstrate continuous compliance with the performance specifications of Special Condition Nos. 5, 6.A, and 7.A., and the emission limits of the attached MAERT. The data must be converted into units of the applicable standards in accordance with this special condition, as follows.
- A. Use the data to calculate for each CT/HRSG, the hourly:
- (1) Heat input. Calculate the heat input in million Btus, using the measured fuel flow and the HHV of the natural gas fuel. Calculate the hourly heat input consistent with Equation F-20 and the procedures for determining the HHV, in Section 5.5.2 of 40 CFR Part 75, Appendix F. In this section, the HHV is referred to as the gross calorific value of gaseous fuel, GCV<sub>g</sub>, and is expressed in Btu/100 scf. The fuel supply must be sampled and analyzed for HHV at least monthly.
  - (2) CO<sub>2</sub> emission rate. Calculate the CO<sub>2</sub> emission rate in short tons per hour, during all periods of operation, in accordance with 40 CFR Part 75, Appendix G, section 2.3, Equation G-4, using:
    - (a) the default emission factor of 118.9 lb CO<sub>2</sub>/MMBtu; or
    - (b) a custom emission factor determined in accordance with 40 CFR Part 75, Appendix F, section 3.3.6, Equation 7-b.
  - (3) Gross electric output. Calculate the gross electric output of each CT/HRSG in MWh on an hourly basis. The hourly gross electric output of the steam turbine generator is apportioned to each CT/HRSG based on the hourly proportion of each HRSG's thermal output to the steam turbine.

- (4) Heat rate. Calculate the heat rate in Btu/kWh, using the heat input and the gross electric generator output. Heat rate does not need to be calculated during periods of MSS.
  - (5) Output-specific CO<sub>2</sub> emission rate. Calculate the output-specific CO<sub>2</sub> emission rate in lb CO<sub>2</sub>/MWh by dividing the hourly CO<sub>2</sub> emission rate by the corresponding hourly gross output in MWh of the CT/HRSG. Output-specific CO<sub>2</sub> emissions do not need to be calculated during periods of MSS.
  - (6) Methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions. Calculate the CH<sub>4</sub> and N<sub>2</sub>O emission rates in short tons per hour during all periods of operation, using the:
    - (a) measured hourly heat input;
    - (b) default emission factors of 1.0(10<sup>-3</sup>) kg CH<sub>4</sub>/MMBtu and 1.0(10<sup>-4</sup>) kg N<sub>2</sub>O/MMBtu, from Table C-2 of 40 CFR Part 98, Subpart A; and
    - (c) conversion factors of 0.45359 kg/lb and 2,000 lb/ton.
  - (7) Emission rate of carbon dioxide equivalent (CO<sub>2</sub>e). Calculate the CO<sub>2</sub>e emission rate, in short tons per hour, as the sum of the CO<sub>2</sub> emissions and the CO<sub>2</sub>e-converted emissions of CH<sub>4</sub> and N<sub>2</sub>O. The CH<sub>4</sub> and N<sub>2</sub>O emission rates are converted to CO<sub>2</sub>e emissions using the Global Warming Potentials of 25 for CH<sub>4</sub> and 298 for N<sub>2</sub>O, from Table A-1 of 40 CFR Part 98, Subpart A, version effective January 1, 2015.
- B. Hourly to 12-month rolling data. Calculate for each CT/HRSG, 12-month rolling:
- (1) Average heat rate and output-specific CO<sub>2</sub> emissions to show compliance with the limits of Special Condition No. 5.
    - (a) Monthly heat rate is the sum of the hourly heat input for the month, excluding periods of MSS, divided by the sum of the hourly gross output for the same hourly periods. At the end of each calendar month, add the monthly heat input to the monthly heat input for the preceding 11 operating months and divide the resulting sum by the gross output in kWh for the same period.
    - (b) Monthly output-specific CO<sub>2</sub> emissions are the sum of the hourly CO<sub>2</sub> emissions for the month, excluding periods of MSS, divided by the sum of the hourly gross output for the same hourly periods. At the end of each calendar month, add the monthly CO<sub>2</sub> emissions to the monthly CO<sub>2</sub> emissions for the preceding 11 operating months and divide the resulting sum by the gross output in MWh for the same period.

- (c) An operating month is any calendar month in which the CT/HRSG operated in normal operation for any time.
  - (2) Emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and CO<sub>2e</sub> in tons per year to show compliance with the limits of the MAERT. Monthly emissions are the sum of the hourly emissions for that month and include all periods of operation. At the end of each calendar month, add the monthly emissions to the monthly emissions for the previous 11 calendar months.
- C. Auxiliary boiler calculations. Calculate hourly and 12-month rolling GHG emissions from the auxiliary boiler using the measured fuel flow and the equations in 40 CFR Part 98 as follows:
  - (1) Equation C-1, for CO<sub>2</sub>; and
  - (2) Equation C-8, for CH<sub>4</sub> and N<sub>2</sub>O.
  - (3) In using Equations C-1 and C-8, convert metric tons to short tons. Also, instead of using a calendar year, sum hourly emissions for each calendar month. At the end of each calendar month, add the monthly emissions to the monthly emissions for the preceding 11 months to obtain the 12-month rolling emissions.
- 15. Fuel meter accuracy and quality assurance. The CT and duct burner fuel flow meters must meet the applicable requirements, including specifications and certification testing, of 40 CFR Part 75, Appendix D and 40 CFR Part 60. The fuel flow meters shall be accurate to  $\pm 2.0$  percent of the units' maximum flow. The fuel flow meter data shall be automatically recorded with a data acquisition and handling system.
- 16. Alternative monitoring of CO<sub>2</sub>. The permit holder may, as an alternative to monitoring CO<sub>2</sub> emissions in accordance with Special Condition No. 13, install and operate a CO<sub>2</sub> CEMS, a volumetric stack gas flow monitor, and an automated data acquisition and handling system in accordance with the CO<sub>2</sub> CEMS system requirements in 40 CFR § 75.10(a)(3) and (a)(5) for measuring and recording the CO<sub>2</sub> emissions to the atmosphere from EPNs CTDB3-A and CTDB3-B.
- 17. Auxiliary boiler efficiency monitoring. The permit holder must measure the fuel-to-steam efficiency of the auxiliary boiler upon initial startup of the facilities and annually thereafter. Either the input-output or the heat loss method of the American Society of Mechanical Engineers' Power Test Code, PTC 4.1, may be used to calculate the overall boiler efficiency.

## **Recordkeeping Requirements**

18. The following records shall be kept at the plant for the life of the permit and made available at the request of personnel from the TCEQ, EPA, or any air pollution control agency with jurisdiction.
  - A. A copy of this permit.
  - B. The permit application dated September 2014 and subsequent representations submitted to the TCEQ.
19. The following information shall be maintained by the permit holder in a form suitable for inspection for a period of five years after collection and shall be made immediately available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:
  - A. Records necessary to demonstrate compliance with the NSPS for GHGs identified in Special Condition No. 3, following the effective date of the NSPS, if applicable.
  - B. Continuous monitoring data for CT/HRSG fuel flow, heat rate, output-specific CO<sub>2</sub>, and emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and CO<sub>2</sub>e, to demonstrate compliance with the performance specifications of Special Condition No. 5 and the hourly and annual emission rates listed in the MAERT.
    - (1) Records must be kept for all hourly, daily, monthly, and 12-month rolling periods.
    - (2) Data retention at intervals less than one hour is not required for normal operation. Periods of MSS should be identified to the nearest minute.
    - (3) Records of heat rate and output-specific CO<sub>2</sub> should identify the times when emissions data have been excluded from the calculation because of MSS or monitoring system malfunction.
    - (4) Records of emission rates should identify the times when emission data has been excluded from the calculation because of monitoring system malfunction.
    - (5) Records should identify numerical factors used in calculations that are used to demonstrate compliance with emission limits and performance standards.
  - C. Records of monthly samples of natural gas HHV.
  - D. Auxiliary boiler operating records, to demonstrate compliance with Special Condition Nos. 7, including:
    - (1) hours of operation, identifying startup and shutdown periods;
    - (2) hourly and 12-month rolling fuel usage and GHG emission rates; and
    - (3) results of annual efficiency tests.

- E. Fuel purchase records, copies of gas supply contracts, test results, or other information to demonstrate compliance with the CT/HRSG, auxiliary boiler, and emergency engine fuel sulfur limits of Special Condition No. 8.
- F. Records of the monthly hours of operation of the emergency engines in emergency and non-emergency operation, and records of engine maintenance, to demonstrate compliance with Special Condition No. 9.
- G. Records of AVO checks for natural gas (CH<sub>4</sub>) leaks and maintenance performed to any piping and valves in natural gas service to show compliance with Special Condition No. 10.
- H. Records of maintenance or leak repair performed on SF<sub>6</sub>-containing circuit breakers.
- I. If applicable, files of all CO<sub>2</sub> CEMS quality assurance measures, calibration checks, adjustments and maintenance performed on these systems to demonstrate compliance with Special Condition No. 16.

## **Reporting**

- 20. The permit holder shall submit to the TCEQ Houston Regional Office reports as described in 40 CFR § 60.7 in accordance with NSPS requirements. Such reports are required for each emission unit which is required to be continuously monitored pursuant to this permit. In addition to the information specified in 40 CFR § 60.7(c), each report shall contain:
  - A. the hours of operation of the CTs; and
  - B. a report summary of the periods of non-complying emissions and continuous monitoring system downtime by cause.

Date: April 1, 2015

# Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX112

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities authorized by this permit.

## Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates
			TPY (4)
CTDB3-A	GE Model 7HA.02 Combustion Turbine (CT) and 770 MMBtu/hr Duct Burner	CO <sub>2</sub>	1,975,187
		CH <sub>4</sub>	37
		N <sub>2</sub> O	3.7
		CO <sub>2</sub> e	1,977,194
CTDB3-B	GE Model 7HA.02 CT and 770 MMBtu/hr Duct Burner	CO <sub>2</sub>	1,975,187
		CH <sub>4</sub>	37
		N <sub>2</sub> O	3.7
		CO <sub>2</sub> e	1,977,194
FWP2	Fire Water Pump 250 Horsepower Diesel Engine	CO <sub>2</sub>	16.4
		CH <sub>4</sub>	<0.1
		N <sub>2</sub> O	<0.1
		CO <sub>2</sub> e	16.5
EG3	2.0 MW Emergency Generator Diesel Engine	CO <sub>2</sub>	155.3
		CH <sub>4</sub>	<0.1
		N <sub>2</sub> O	<0.1
		CO <sub>2</sub> e	156
AUX3	Auxiliary Boiler 40 MMBtu/hr	CO <sub>2</sub>	20,494
		CH <sub>4</sub>	0.4
		N <sub>2</sub> O	<0.1
		CO <sub>2</sub> e	20,515
SF6-FUG	SF <sub>6</sub> Insulated Equipment (5)	SF <sub>6</sub>	0.003
		CO <sub>2</sub> e	66
NG-FUG	Natural Gas Piping Fugitives (5)	CH <sub>4</sub>	19
		CO <sub>2</sub>	1.7
		CO <sub>2</sub> e	476.3



Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates
			TPY (4)
MSS FUG	Natural Gas Venting from CT Shutdown and CT, Small Equipment, and Component Maintenance (5)	CH <sub>4</sub>	0.1
		CO <sub>2</sub>	<0.1
		CO <sub>2</sub> e	2.5
Total Sitewide GHG Emissions (6)		CO <sub>2</sub>	3,971,041
		CH <sub>4</sub>	92.7
		N <sub>2</sub> O	7.4
		SF <sub>6</sub>	0.003
		CO <sub>2</sub> e	3,975,621

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources, use area name or fugitive source name.
- (3) CO<sub>2</sub> - carbon dioxide  
N<sub>2</sub>O - nitrous oxide  
CH<sub>4</sub> - methane  
SF<sub>6</sub> - sulfur hexafluoride  
CO<sub>2</sub>e - carbon dioxide equivalents, based on the following Global Warming Potentials from 40 CFR Part 98, subpart A, Table A-1, effective January 1, 2015: CO<sub>2</sub> (1), CH<sub>4</sub> (25), N<sub>2</sub>O (298), and SF<sub>6</sub> (22,800)
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. Annual emission limits include both normal and maintenance, startup, and shutdown (MSS) emissions.
- (5) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.
- (6) Total emissions include the potential to emit for all listed sources. Totals are given for informational purposes only and do not constitute emission limits.

Date: April 1, 2015